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CIO

The Magazine For

Why Vendor-Led ERP Integration Doesn't Work

Page 98

BOB RIDOUT,
DUPONT'S CIO

DIANE STRICKLER,
RIDOUT'S SECOND
IN COMMAND

Deputy CIOs

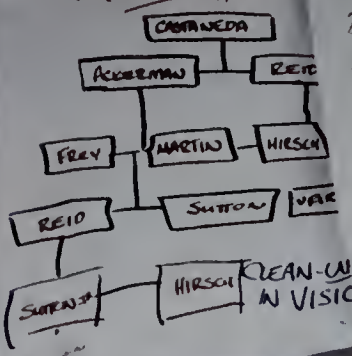
I.T. TAKES TWO

One to Make the Plan
One to Make It Happen
How to Make It Work Page 88

NAMES FOR (ONLINE) PRINT PUB (CONTEST?)

THE COOKER
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- DIGITAL PHOENIX
- SPARK PUB - NEW
- FIREZONE
- FIREZINE

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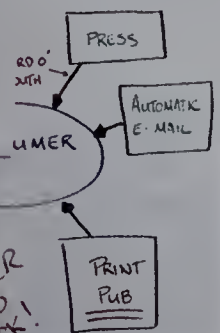
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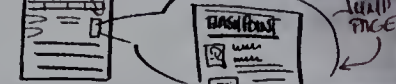
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- VARIABLE CAPACITY
- INTERFACES

* All Above to CONTRACTOR

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PHASE ONE PROMOTION

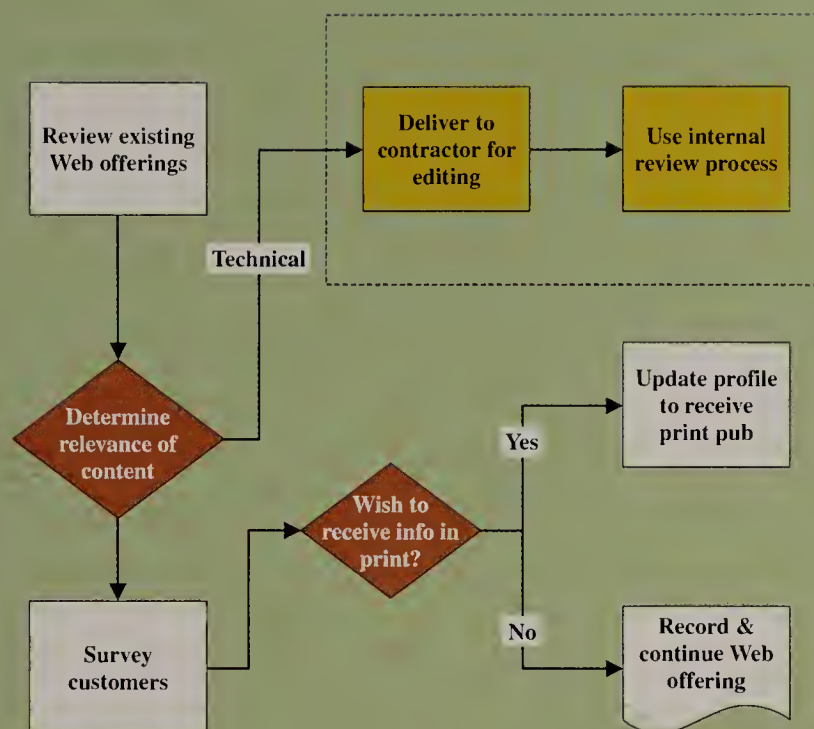
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- 1:00 AM - CONVENIENCE
- introductions
- 1:30 AM - Strategy Overview
- 1:00 AM - Methodology
- 1:30 AM - Results
- 1:00 AM - ACTION PLAN
- 1:30 AM - Quantify Results
- LUNCH -



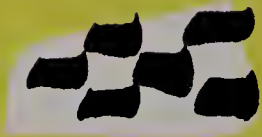
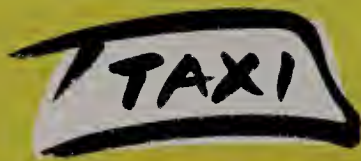
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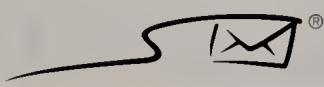


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VOL. 15 • NO. 4 • NOVEMBER 15, 2001

Cover Story

THE CIO ROLE | 88

IT Takes Two

These days, it's hard for one person to fill the CIO's shoes. Some organizations are finding that an operations-focused deputy CIO is just the ticket.

By Polly Schneider T aylor

COVER PHOTO BY BILL CRAMER



88

DuPont CIO Bob Ridout and his deputy Diane Strickler complement each other—Ridout handles the board and CEO while Strickler works with the company's regional CIOs.

Features

I.T. IN THE AFTERMATH

At the Center of a New World | 65

On Sept. 11, two ordinary people—New York City's new acting CIO and the city's regional Red Cross CIO—rose to an extraordinary occasion. Here's what they did and where they go from here. *By Sarah D. Scalet and Stephanie Overby*

Where Do We Go from Here? | 77

Six experts offer their ideas on the future of the CIO role, the supply chain, just-in-time manufacturing, security, management and other issues affected by the events of Sept. 11, 2001.

ERP INTEGRATION

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Getting different vendors to truly integrate complex software is impossible. But that doesn't mean a more limited form of interfacing can't be achieved. *By Christopher Koch*

E-GOVERNMENT

How to Keep the Citizens Satisfied | 110

For more than 200 years, state governments have had a reputation for bad service. Now state CIOs are trying to change that using CRM. *By Steve Ulfelder*

I.T.-BUSINESS ALIGNMENT

Gartner, Align Thyself | 134

When Gartner's current CIO took the helm and called attention to terminal misalignment, was it a case of the emperor's new clothes? Here's a candid look at what Gartner saw, where it's been and what it's doing about it. *By Marc Ferranti*

MORE ►►►



Lady in Red: On Sept. 11, Leslie Hunt, CIO of the Greater New York American Red Cross, stood tall in front of the Red Cross entrance and in front of her IT staff. Her story, on Page 66.



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Columns

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PowerPoint reduces conversation to simple-minded bullet points. To get your group talking again, try giving one-way presentations the boot. *By David S. Clarke*

CAREER COUNSEL

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Korn/Ferry International's Mark Polansky offers timely advice to CIOs and IT managers on careers tracks, executive résumés and MBAs.

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By David Rosenbaum

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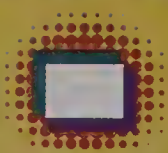
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MONDAY Tech Tact: New Tools for New Jobs Technology Editor

Christopher Lindquist on what's coming and what it's good for. www.cio.com/techtact



Lindquist

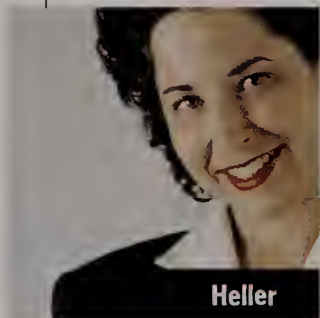
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Martha Heller's column and join the debate. comment.cio.com



Heller

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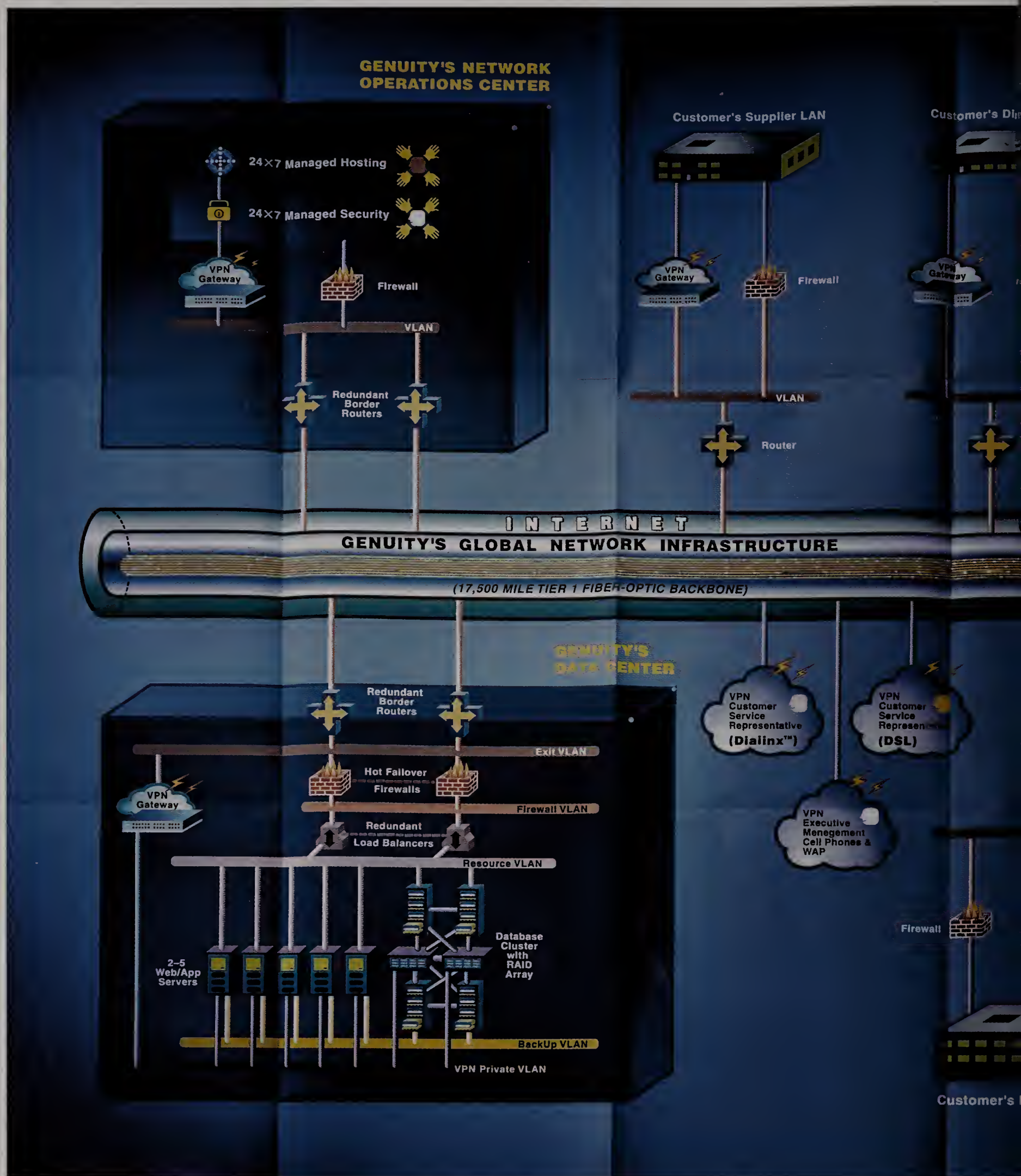


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In 1969, BBN was hired by the U.S. government to develop the ARPAnet, the forerunner of the Internet.



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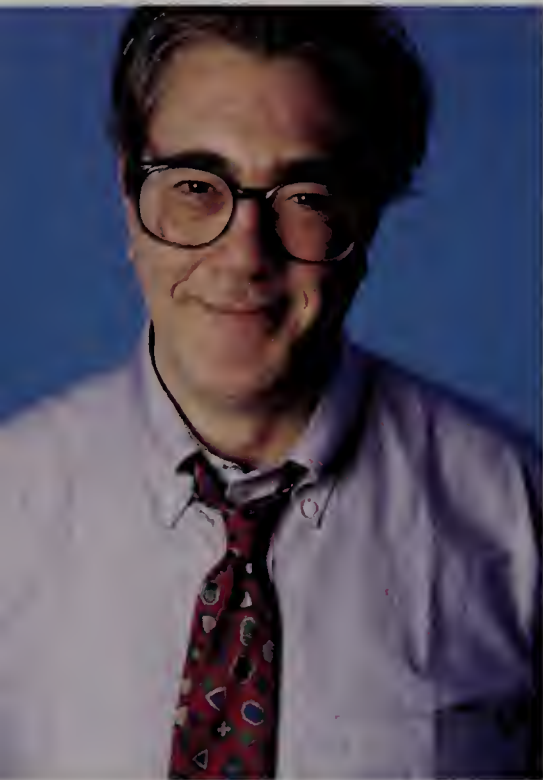
In 1997, BBN was acquired by GTE, the company that created our high-speed, 17,500-mile, Tier 1, fiber-optic network.

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From the Editor



For ongoing coverage relating to the attacks and their aftermath, please visit www.cio.com/online/crisis.html.

Business As Usual and As Unusual

NO MATTER WHAT, some things never change.

Day in, day out, the CIO's job is tough. That's a given. In "IT Takes Two" (Page 88), we look at how CIOs are divvying up their job—reserving the strategic side to themselves and appointing a deputy to handle the operational end.

Every morning, vendors wake up telling themselves that their new software will fix whatever ails your business. Then they go out to tell (and sell) you. In "Why Your Integration Efforts End Up Looking Like This..." (Page 98), we examine the claim that multivendor software integration packages will liberate CIOs from the onerous task of taking software from different vendors and integrating it themselves. (P.S. It won't.)

Government CIOs invariably struggle with low budgets and the high expectations of the citizens they're supposed to serve, and "How to Keep the Citizens Satisfied" (Page 110) reports on the ways in which state CIOs are trying to bring CRM practices to the public sector.

And then there's alignment. There's always alignment. In "Gartner, Align Thyself" (Page 134), we tell the tale of how the high priests of business-IT alignment found themselves woefully misaligned, and what they did about it.

These stories are all part of the larger, continually

developing IT saga CIO magazine reports on issue by issue, month by month.

However, as we now know all too well, some things do change—suddenly, sadly and irrevocably.

As part of our continuing coverage of the repercussions of Sept. 11, particularly as they pertain to the IT community, its people and its role in American business, we profile New York City Acting CIO Avi Duvdevani and American Red Cross of Greater New York CIO Leslie Hunt—two ordinary people rising to an extraordinary occasion in extraordinarily successful ways. "At the Center of a New World" (Page 65) not only paints a vivid portrait of how Duvdevani and Hunt got their respective organizations up and running after the World Trade Center catastrophe, it contains valuable lessons for how CIOs—and their enterprises—should conduct operations in the future. We also asked IT and business experts the question on everyone's mind these days: "Where Do We Go from Here?" (Page 77). Some say that certain business truths and processes, including just-in-time manufacturing and the importance of face-to-face communication, need to be reexamined; others caution us not to throw out the wisdom of the past 30 years in our rush to make ourselves safe.

So where *do* we go from here?

We go forward.

A handwritten signature in dark ink, reading "David Rosenbaum".

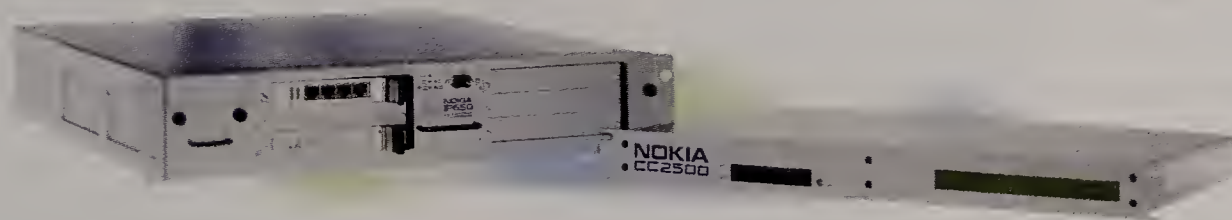
Managing Editor
drosenbaum@cio.com

"Nokia led the parade...in the firewall/VPN security appliance market."

—IDC, June 2001

"Closer to high-availability nirvana than any."

—Network World, December 11, 2000



"The Nokia IP530 is truly the best-of-breed platform in the firewall market."

—Information Security Magazine, September 2001

"A formula for earning our Editors' Choice."

—PC Magazine, September 25, 2001

"Easy to install and, more important, easy to restore."

—Network Computing, May 14, 2001



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Reader Feedback

SHARE THE WEALTH

Intrigued by "Cogs in the Machine" [CIO Confidential, May 1, 2001] and the follow-up letters, I set out to synthesize the seemingly opposite perspectives on human capital management and organizational dynamics.

Most of us may agree that to survive in business one must offer something for which someone else is willing to exchange value and do so at the least cost overall. Could layoffs be understood by saying that those affected were offering less value or value at a higher cost? Perhaps. Certainly, this helps explain why reductions in payroll costs yield increases in stock price for the shareholders with resulting accolades for the CEOs.

We must consider other professional dimensions to explain why, as a group, senior corporate officers are affected less severely. In organizations there are three separate professions, each with its own set of customs or culture: the operations, executive and technology cultures. Each has its own attitudes about people, work, money, time, technology and authority. And while their differences lead to conflicts, they share lifetime security as a basic need.

Perhaps financial literacy and deliberate disclosure will draw attention to opportunities to build wealth beyond the executive class to as many nonexecutives as possible, and encourage financial recovery activities that cut bonuses first, then ESOP payments and then salaries before cutting jobs.

Robert O. Suarez
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CLARIFYING FOOL'S GOLD

David T. Gordon misstates the findings and recommendations of the Alliance

for Childhood and its

2000 report "Fool's Gold: A Critical Look at Computers in Childhood" ["A Fool and His Gold," June 15, 2001].

Gordon incorrectly implies that we propose eliminating computers from schools. We call for a moratorium on the further introduction of computer technology in preschool and elementary classrooms until research clarifies its actual benefits and potential harms. We have specifically made an exception for assistive technology for children with disabilities.

Gordon states that the report offers no real evidence to substantiate its warnings of potential harm. The fact is that there has been virtually no research

in this area, so we must rely on the anecdotal evidence and leading experts on children's health and education.

Our report recognizes that companies selling high-tech products for children sincerely believe their products will serve children well. Research and experience, however, challenge that assumption. Many experts now recognize that the educational benefits of computers in childhood have been oversold, at huge cost to struggling schools and families.

Colleen Cordes and Edward Miller

Coeditors

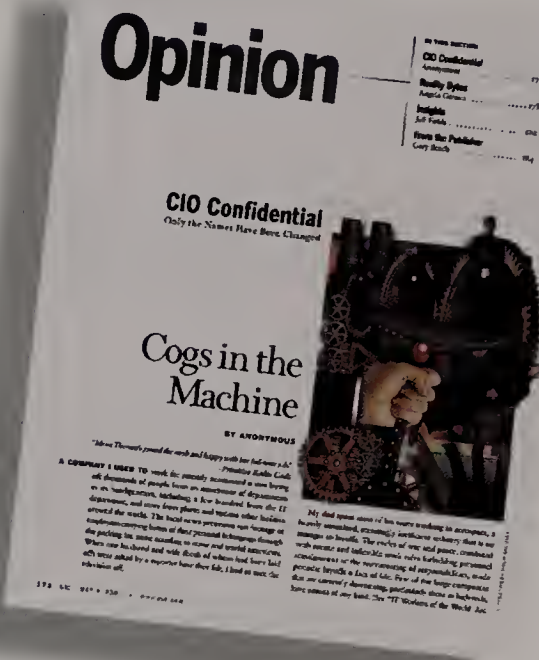
"Fool's Gold"

Takoma Park, Md., and

Cambridge, Mass.

ccordes@erols.com

edmiller@ziplink.net



WHAT YOU THINK WENT WRONG AT CISCO

You call it a growth bias ["What Went Wrong at Cisco," Aug. 1, 2001]. I call it the concept of limit and an expectation of change. I believe that Cisco stumbled because it did not build a concept of limit into its forecasting models, and so it had no way of building in an expectation of change. Ajay Shah [CEO of Solectron] wants to blame an inability of systems to intuit inflated orders that second-guess demand shortages. That explanation doesn't feel satisfactory. Cisco wasn't off by 10 percent or 20 percent. It was off by 8,500 jobs. The fundamental flaw with Cisco's forecasting is that it is trend-based. This has always led to a catastrophic failure. The railroads in the 1890s. The savings and loans in the 1980s. Cisco in 2000. The telecoms in 2001. It's all the same:



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Chief Information
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Affiliated Computer
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The longer the trend continues, the more we become convinced that it will always continue. But it never does. Sooner or later, a limit is reached, and the trend fails.

Tim MacDonald
Senior Vice President
Meridian Investments
Quincy, Mass.
tmacdonald@meridianinvestments.com

Your article sounds a little anti-Cisco to me. Yes, Cisco was wrong in judging the figures in its systems, but it still has outstanding tools.

Your question to blame either the fast-changing economy or the flawed systems is the wrong question. Because it's always the same reason behind winners and losers in the industry: It's all about management. If a system delivers facts and figures that are wrong, it's because a manager (at the end of the day the CEO) was not aware of what he really needs to control his empire. In addition, if I do not judge the figures the way I should, it's a management failure. And to blame the outsourcing is also pointing at the symptoms and not the causes. The real failure is again a management mistake in securing the suppliers with fixed contracts while never really asking them what they think about the future of the industry. So, good management anticipates market changes and brilliant management is even able to do this in a fast-changing economy. Therefore my statement about Cisco (and other huge corporations) is: Real-time information is important, but real-time outstanding management is more important.

Martin Siebold
CEO Operations
Wetzel GmbH
Germany
m.siebold@wetzel.de

STAY FOCUSED ON THE GREEN

Thank you for calling attention to the fact that it's possible and relatively easy in some cases for corporations to be environmentally conscious and simultaneously economically profitable ["Green Lights," Aug.

15, 2001]. This is a message that really needs to be publicized these days, as our national leaders don't seem to want to believe it.

However, I was a bit concerned about the way a couple of companies you discuss were portrayed in the piece. For example, while it's great that S.C. Johnson & Son phased VOCs [volatile organic compounds] out of its Raid product, the company is nonetheless still selling a toxic pesticide that children are exposed to in many American homes. I don't mean to single out one company; similar examples could be made for Dow as well and probably others.

Companies should be rewarded for taking small steps and making an effort. However, that does not get them off the hook for future achievements. Also, it would have been interesting to see how environmental or consumer organizations view corporate choices of this sort. Your article relied primarily on interviews with corporate employees who are expected to speak about their respective companies in a positive light.

Lena Brook
Environmental Policy and Advocacy Consultant
lenabrook@yahoo.com

CORRECTIONS

In "How to Beg, Borrow and Twist Arms for a Good Cause," Oct. 1, 2001 we incorrectly cited the National Center for Missing and Exploited Children's URLs. The correct Web address for NCMEC is www.missingkids.com, and the Internet safety site is www.netsmart.org.

Borders Group, based in Ann Arbor, Mich., provided the CIO best-seller list for the Sept. 15, 2001 Off the Shelf.

We regret the errors.

WHAT DO YOU THINK?

Send your thoughts and feedback to letters@cio.com. Letters may be edited for length or clarity.

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trendlines

the **NEW** the **HOT** the **UNEXPECTED**

Edited by Sandy Kendall

USER RELATIONS

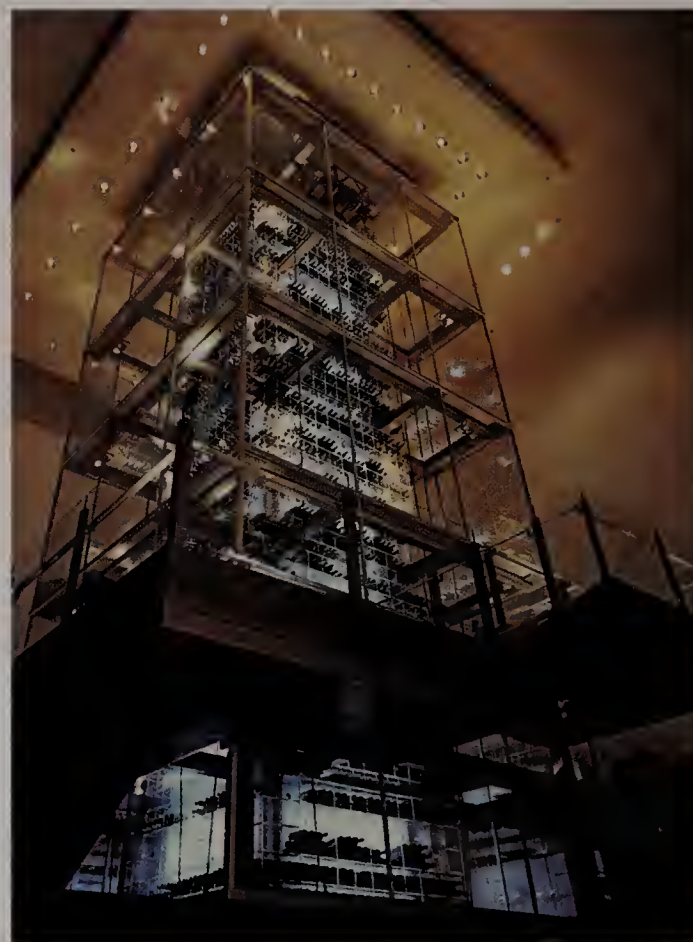
Wireless Winelist

By Stephanie Overby

CAN'T DECIDE what wine will best complement your roasted duck pot-au-feu with foie gras? If you're dining at Aureole in Las Vegas, you're in luck. Chef Charlie Palmer's restaurant in the Mandalay Bay Resort and Casino is the first to offer patrons a wireless winelist.

The Aureole eWine Book, launched in June, wasn't pioneered by the restaurant's resident techie, but by its wine director, Andrew Vadjinia. A self-described "computer geek," Vadjinia had been tossing around the idea for two years. He thought it would be the perfect utensil for diners who are intimidated by wine—or who should be. "We're in an industry where a lot of people think they know about wine and don't. Or they're completely scared of it. We have one of the largest selections in the country, if not the world," he explains. "Having all of this information in electronic format as opposed to print lets them take that first step."

Aureole spent \$125,000 on the server network and 30 eWine Books, which offer information on the label, regional origin, producer and reviews for the restaurant's 3,500 wines via a touch screen interface. The device, constructed by Chicago-based CyberPixie, weighs a little less than three pounds, sports a 10.4-inch screen and runs on a Linux operating system. The software was designed by Redoctober Industrie of Seattle, which created an XML content publishing system to allow Vadjinia and his stewards to revise the list on the fly. Frequent guests can build a history of selections they've enjoyed so that they can choose them again. Vadjinia says the e-book will eventually be tied directly to



Towering over diners, Aureole's vast wine selection calls for serious data management.

Department of BIG, Scary Numbers

119,590: ... to ...

11.7 MILLION: U.S. Internet users who visited news sites the week of Sept. 11, up from 6 million the previous week

\$3.2 BILLION: approximate cost to replace technology lost by securities companies alone on Sept. 11

Sources: Associated Press and NPR Research, Jupiter Media Metrix, The Tower Group

the restaurant's wine inventory system.

Showcasing the wine collection is nothing new at Aureole. The restaurant boasts a four-story glass wine tower holding 10,000 bottles. When a bottle is ordered, female "wine angels" (it is Vegas, after all) in harnesses are hoisted up via a system of pulleys and retrieve the selection in a mere 10 seconds.

In September, Aureole launched an associated website, www.ewinetower.com, that provides all the information available on the e-books so that future patrons can put wines on reserve for their visit and view webcam shots of the wine tower and angels.



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VIRTUAL EDUCATION

You Can't Do It All

By Eric Berkman

YOU'RE RUNNING LATE for a golf game with a vendor. As you're weaving in and out of traffic, scrambling to beat every light, your cell phone rings. You've got to talk your technicians through a server crash. Meanwhile you swerve and spill coffee all over yourself. Now you need to somehow make yourself presentable—all while trying to stay on the road. Can you handle it?

General Motors and Enlighten, an Ann Arbor, Mich.-based interactive consultancy, have devised a game that will most likely prove you're not up to the task. As part of

an effort to educate consumers about the dangers of driving while distracted, GM enlisted Enlighten to develop the Driver Distraction Demo—animated simulations that put you behind the wheel, then assail you with distractions. In one you're a soccer mom trying to get a carload of bickering kids to the field by game time. In another you're a Gen X-er trying to get friends to a rock concert on time. Or you can be the businessperson rushing to a meeting. Each involves similar distractions—ringing cell phones, the need to get yourself presentable, passengers trying to get you to

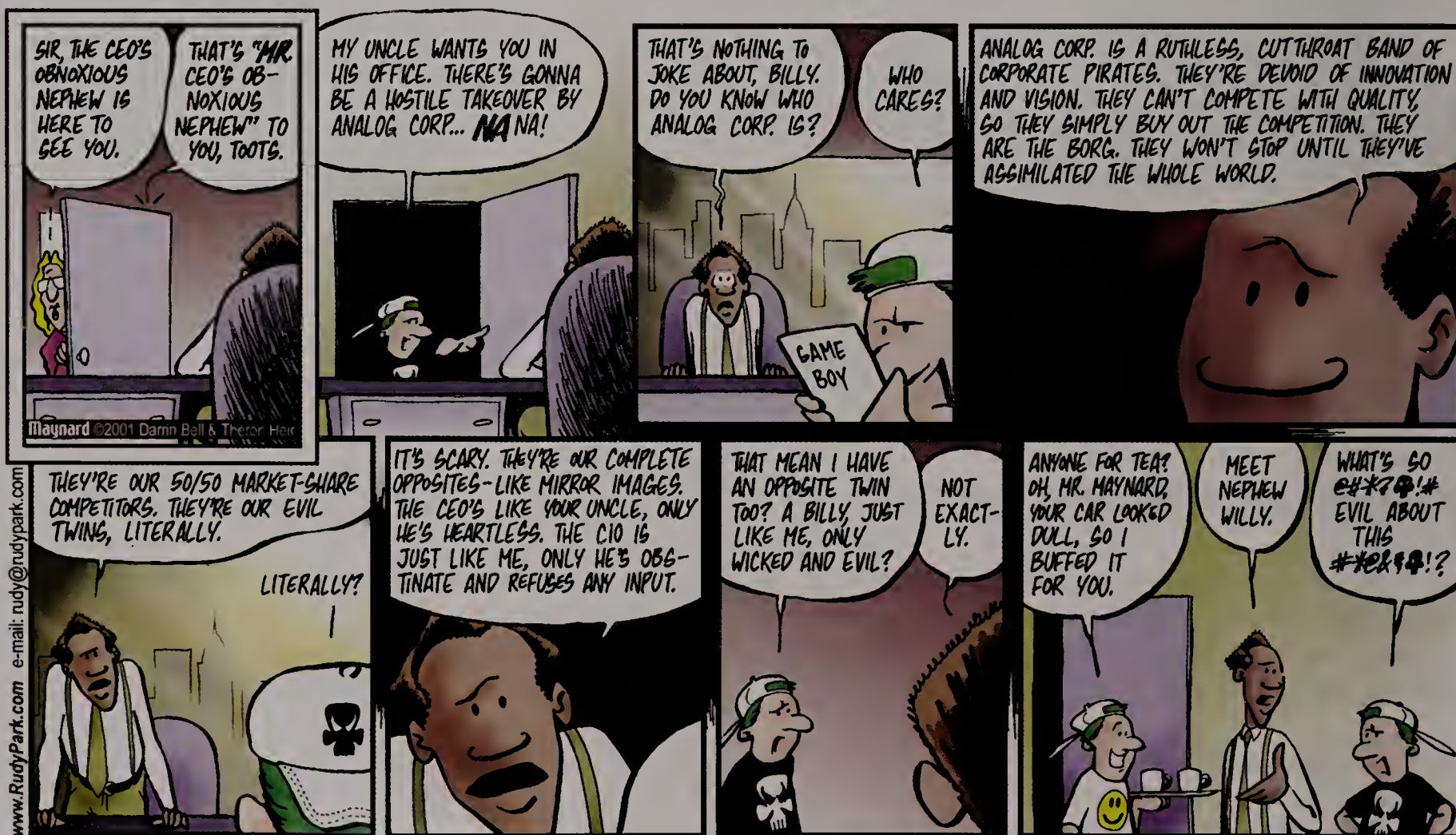
switch radio stations.

Each time you attend to a distraction, you start to veer off the road. All three demos are available at www.senseabledriving.com.

"Most people think, 'Oh, I can use my cell phone while driving,'" says Enlighten CEO Steve Glauberman. "GM wanted an interactive simulation that would educate people about the perils of driver distraction while entertaining them at the same time."



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Washington Watch

Edited by Elana Varon

Response to Terror

AFTER THE SEPT. 11 terrorist attacks, Attorney General John Ashcroft sought expansion of governmental police powers, which may be as troubling as it is reassuring to CIOs. Many provisions of the antiterrorism legislation debated last month in Congress—which aims to expand federal electronic surveillance powers and give investigators access to more corporate records—have been kicking around for years. Law enforcement officials wanted them mainly to pursue drug dealers using cell phones and e-mail. But in the unfettered '90s, these ideas went nowhere because civil libertarians and company executives alike saw too much potential for officials to abuse their power and quash the online economy. But most Americans now seem to think that less privacy is a small price to pay to sniff out terrorists.

Stewart Baker, a lawyer with Washington, D.C.-based law firm Steptoe and Johnson and former general counsel for the National Security Agency, sees little direct impact on most companies from this first round of legislation. Provisions that would give investigators the right to subpoena Internet addresses and credit card information would mainly affect ISPs and financial institutions. Unless you are the CIO of the Cali cartel, Baker says, you probably won't see the FBI knocking on the door to your data center too often.

But the prevailing mood in Congress is to get as much information into investigators' hands as possible. According to House and Senate staff members, that means future legislation will seek to obtain more data from private sources, including both individuals and businesses. Lawmakers aren't saying yet what else they

plan to pull out of their hats, but an aide to **Sen. Patrick Leahy** (D-Vt.), chairman of the Senate Judiciary Committee, says, "There's no question that this [antiterrorism legislation] is just the initial request from the administration."

The attacks have already given new life to other unresolved debates, such as whether the federal government should have the keys to open en-



Sen. Judd Gregg

crypted data files that suspects exchange online. **Sen. Judd Gregg** (R-N.H.) says he's heard for years that the FBI needs to be able not just to intercept e-mail from suspected criminals and terrorists, but also to read any scrambled messages. He wants hardware and software companies to build

decoding capability into their encryption products. Technology companies counter that giving government this decryption power would cripple consumer faith in e-commerce.

Meanwhile, a recent executive order from President Bush that is designed to combat money laundering could affect anybody who handles money, not just big banks, notes Baker. The order expands the list of organizations with suspected terrorist ties with which U.S. companies are forbidden to do business. Baker thinks that could result in such a large list of people and businesses that are off-limits that CIOs would need to install systems to prevent such transactions.

Baker says that if it turns out that terrorists operating in the United States took advantage of the way business is done here, Congress won't



Rep. John Conyers

hesitate to change the rules. At press time, Congress was debating a provision in anti-terrorism legislation that would require consumer credit reporting agencies to give the government any information related to a terrorism investigation. Civil liberties advocates such as

Rep. John Conyers (D-Mich.) say individual rights are at the greatest risk "at times of inflamed passions and national anger." Today, it's not just individual rights but also freedom from government regulation of commerce that may be on the line. Even Conyers thinks fighting terrorism will probably require some concessions by individuals and the private sector to improve public security. —Ben Worthen

What demands should government make on your company in the name of national security? E-mail Senior Editor Elana Varon at evaron@cio.com. Contact Staff Writer Ben Worthen at bworthen@cio.com.

"If our critical infrastructures are targets, it is the private sector that is on the front line. Defense of the nation...must shift to partnerships that span private and government interests."

—Sen. Robert Bennett (R-Utah)

ENTERPRISE SELF-SERVICE:

A Business Model *for a* CONNECTED

"Companies looking to transform themselves into e-enterprises or to extend their existing e-business initiatives need a new business model—a new model that fundamentally changes how companies view their relationships with their customers, partners and employees," says Chris Grejtak, EVP and Chief Marketing Officer of BroadVision Inc., Redwood City, CA. "These enterprises need to adopt an 'outside-in' perspective as opposed to the traditional, 'inside-out' viewpoint."

"Known as Enterprise Self-Service (ESS), this new business model allows your major stakeholders to interact with your enterprise in a personalized, collaborative way using the power of the Web," Grejtak says. "ESS means changing all of your relationships—interactions, transactions and services—from a manual, human-assisted paradigm to a personalized, self-service model. The result is immediate business value in the form of reduced costs, enhanced growth, improved productivity and long-term customer satisfaction and retention."

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Grejtak points out that most enterprises today run their business operations using various legacy back-office, financial and human resource applications. Data warehouses and other intelligence and analytic tools also come into play. Associated with these systems is a set of business processes that require expensive, human-assisted services and interactions. CRM and other applications may provide automated support, but call centers,

help desks, hot lines and other internal systems continue to be capital- and human resource-intensive. These support staff and service people devote between 70 and 80 percent of their time to interactions with employees, partners and customers.

"But the biggest problem is that the traditional model imposes a strict way of doing business with customers, partners and employees that is costly to maintain," says Grejtak. "BroadVision is working with companies that have realized significant business value by moving up to 60 percent of their core business processes to an

Enterprise Self-Service model. They are realizing significant cost reductions and dramatic increases in the quality of the interaction between the enterprise and its key constituents."

Leading the Way

Although Enterprise Self-Service is a new and different business model, it already has a proven track record.

BroadVision customer British Telecom (BT), concerned about call

center costs, is converting key business processes to a self-service model. Significant cost reductions and increased revenues have been the result. For example, BT's "Friends & Family" program costs on average \$4.73 per request in the call center and just four cents on the Web. The BroadVision-powered BT.com website generates 100,000 new customer registrations each month and serves more than two million page requests per day. The website now generates more than \$142 million per year in direct revenue by providing advanced personalization and self-service capabilities.

From Promise to Reality

The self-service model is making Web-based cost savings and new revenue streams a reality. Grejtak points to a recent in-depth research study of e-business initiatives, conducted by BroadVision and Surgency, a well-known consulting and research firm. The research involved hundreds of enterprise clients and interviews with an equal number of industry leaders.

The results of this research are summarized in a report that details nine transformational strategies that com-

ucts and services. The software must also facilitate close relationships with application service providers (ASPs), as well as access to exchanges and cross-selling. Reports on customer and end user feedback contribute to improvements in future solutions packages.

At Answer Financial, Inc. (www.answerfinancial.com), an online insurance agency with an integrated call center, BroadVision solutions are used to provide customers with Web-based services that allow them to research and compare various types of insurance policies from some 175 top-rated national providers. By dispensing unbiased information and providing decision tools on policies ranging from life, auto, homeowner and health to pet insurance and home warranties, Answer Financial acts as a one-stop solution for consumers, enabling them to compare hundreds of plans using one site.

Customer Self-Service—This strategy reduces service costs, such as running call centers, by making information immediately available to customers on a 24/7 basis. Customers are empowered to address their issues

tomers extensive, interactive trip-planning capabilities that provide comprehensive information and assistance—from driving directions and road construction updates to hotel and dining reservations. An online road trip guide allows visitors to create and print out their entire road trip by selecting start and end points. The system generates online maps and turn-by-turn driving directions. In addition, visitors can use the website to make reservations through a booking partner called Places to Stay. The website generates substantial sales of Rand McNally atlases, maps and software, as well as revenues from an online shop that carries approximately 4,500 travel-related items.

Customer Lifecycle Management—Designed to cultivate customer relationships from pre- to post-sale and beyond, this strategy allows businesses to anticipate and deliver the products customers want, when and how they are wanted. Supporting systems help personalize customer interactions, identify behavior patterns, support mass customization and enable continuous product innovation. Effective customer lifecycle management builds customer loyalty at every stage in the lifecycle by offering customers personalized, Web-based care through multiple channels and by helping the business target customers with relevant value-added services.

GE Supply, a \$2 billion distributor of electrical, voice and data products, has leveraged its BroadVision self-service site (www.gesupply.com) to significantly increase online revenues and its online customer base. Lifecycle management allows customers to review extensive information and make purchases online. The site automatically provides content relevant to individual users' interests, including featured products, industry-specific information, customer-specific pricing with online quotes, and time-saving ordering tools such as purchasing lists, quick-buy functions and an individualized catalog that remembers previous purchases.



BT's "Friends & Family" program costs on average \$4.73 per request in the call center and just four cents on the Web.

panies have used as they move to an Enterprise Self-Service business model.

These nine transformational strategies include:

Total Solution Provision—This initiative bundles products and services together into a targeted solution, freeing customers from having to integrate separate purchases on their own. The strategy focuses on helping a business coordinate with multiple suppliers and partners. Customer satisfaction is increased because they receive a complete solution from a single touchpoint.

Software enabling this strategy should make it easy to obtain information or access aftermarket prod-

whenever they want. And the business is able to scale services more smoothly than would be possible when customer service is provided solely by call center staff.

Customer self-service requires a system that gives customers online access to and interaction with all their current account information. Applications should enable them to quickly search for additional information and configure a customized solution. These interactive systems also enable self-directed purchasing and exchanges.

For example, Rand McNally's BroadVision-powered site (www.randmcnally.com) offers its cus-

One-to-One Customer Interaction—

By seamlessly sharing information throughout the corporate infrastructure, the enterprise presents a single face to its customers no matter how the interaction takes place or what part of the company is involved. This strategy is particularly relevant for businesses whose products are seen as commodities, which makes service differentiation, branding and trust building critical. It allows the business to learn more about its customers and refine its offerings, building even greater brand loyalty.

This strategy requires software that enables the seamless sharing of information throughout the enterprise. Also required are applications that support continuous learning about customer needs and preferences in order for the business to adapt its product and services offerings.

Circuit City is well known for its high level of customer service, low prices and broad selection of brand-name consumer electronics. The company's "e-Superstore", www.circuitcity.com, is completely integrated with their physical store's back-end systems for order fulfillment and inventory. The BroadVision-powered site allows Circuit City to replicate the customer experience at its Superstores while leveraging the advantages of 24-hour Internet access. In addition to being able to browse, purchase and arrange for home delivery of products, consumers can select and check the inventory of up to three "express pickup" locations, where customers can take delivery of their orders after purchasing online. Because Circuit City's in-store prices are adjusted to compete with local retailers, the e-Superstore automatically adjusts the price to reflect in-store specials at the location chosen by the customer for the express pickup.

Demand-Driven Forecasting and Replenishment—This strategy correlates real-time information on customer behavior and consumption patterns with sales and supply data. Real-time information on supply and demand helps companies reduce

inventory carrying costs. Customers benefit because consumption immediately triggers replenishment, eliminating waiting for purchases.

Achieving demand-driven forecasting and replenishment requires a system that facilitates demand planning, collabora-

Rand McNally's BroadVision-powered site offers its customers extensive, interactive trip-planning capabilities that provide comprehensive information.



tive planning, forecasting and replenishment (CPFR), and make/configure to order features.

RS Components, a major U.K. distributor of electronic and industrial supplies, uses BroadVision One-To-One® profiling and observation techniques to add a personal touch to its interaction with 150,000 customers who evaluate and order more than 100,000 products online at www.rswww.com. Repeat customers are presented with information on special offers that relate specifically to their areas of interest, further driving demand.

Innovation and Collaborative Design—This initiative assimilates partner capabilities and shares customer and product knowledge throughout the extended enterprise during the entire product lifecycle. Particularly suited for emerging marketplaces and R&D intensive industries, this strategy enhances communication among all team members and customers in order to improve product development. As a result, more innovative product designs are created, time-to-market is cut, and sales and profits increase.

Support for this strategy is provided by software that blends concurrent engineering with real-time, online communication. Chat functionality and the ability to share images online are essential. Capturing customer and partner feedback on a regular basis is also a requirement.

One of Taiwan's largest semiconductor foundries uses BroadVision solutions to collaborate with semicon-

ductor partners on product design, engineering, logistics and manufacturing. The site has the requisite scalability to support the manufacturer's rapid growth. The company's website features a "Virtual Fab" window into the foundry's manufacturing environment

so customers can follow their wafers through the manufacturing process. Customers and partners use the website to conduct engineering collaboration, order products, track production data, and access customer service. An Internet conference forum enables direct interaction among engineers for sharing charts, screenshots and individual die images. The highly interactive website allows the foundry to deliver information in real-time, promotes collaboration, and enables the manufacturing of high-quality, leading-edge integrated circuits.

Supplier and Partner Self-Service—Improving supplier and partner access to the enterprise's information and transaction systems is the purpose of this strategy. Because businesses are able to communicate more efficiently with the members of their extended enterprise, they can execute their inter-enterprise plans more cost-effectively, streamline common activities and promote informed, coordinated decision-making.

Supporting systems for this strategy must provide collaborative planning, forecasting and replenishment, direct procurement, exchange applications, standardization and outsourcing features.

Aviall, a distributor for 90,000 aviation-related line items, has created a BroadVision-based website (www.aviall.com) that enables its suppliers to view sales and inventory information in real time, enhancing their product and inventory planning, supply chain management and forecasting. The site feeds outstand-

ing quotes and orders data directly into supplier ERP or MRP systems, assisting them with supply chain management, production and inventory planning and forecasting. In the process, Aviall has forged tighter bonds with its suppliers, boosting the company's competitive advantage.

Employee Self-Service—Enabling employees to take care of routine business using Web-based applications allows them to focus on higher value-added activities. This strategy allows employees to access information and carry out routine transactions related to their employment—a far more productive, efficient and satisfying process than the more traditional, lengthy trips through a bureaucratic paper trail.

Systems supporting employee self-service provide access to information and transactions related to benefits, career training, time and labor reporting, e-learning, travel and expenses.

At Anderson Trucking Service, a BroadVision-powered website (www.ats-inc.com) is helping to grow its business and attract and retain good drivers. The busiest page on the site provides drivers with real-time information on which loads need hauling, a real plus for contract drivers. Drivers who are full-time Anderson employees use the site to update the system on their progress and start the settlement process while on the road, rather than waiting to submit paperwork after the trip is completed. This speeds up their payments substantially.

Community Empowerment—Businesses implement this strategy when they wish to establish and nurture a network of relationships between the business and its customers. This solution creates a website where people with similar concerns can share information.

Systems for this strategy should facilitate content creation and community branding as well as mechanisms for community profiling to ensure relevance. The website should be inviting and easy-to-use.

Using BroadVision software, The Home Depot (www.homedepot.com) offers the expertise of its store associ-

ates over the Web. Customers have access to more than 100 "how-to" projects. One click presents all the information needed to complete a project, including expert tips, skills and time required, plus a listing of tools and materials needed—all available, of course, at The Home Depot. The site's dynamic profiling drives relevant content to visitors using the service, which was built to support 20 million daily visits and 40,000 concurrent users.

Mapping Your Strategy

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BroadVision also provides a full spectrum of global services and support to ensure customer success. Included is consulting, training and partner support that involves working closely with platform vendors and application service providers.

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BroadVision's Enterprise Self-Service applications create immediate business value by transforming the way organizations do business—moving relationships to a personalized, self-service model that enhances growth, reduces costs and improves productivity. Leading global companies use BroadVision to power their Enterprise Self-Service initiatives—using the Web and wireless devices to unify and extend an enterprise's applications, information and business processes to serve its employees, partners and customers in a personalized and collaborative way.

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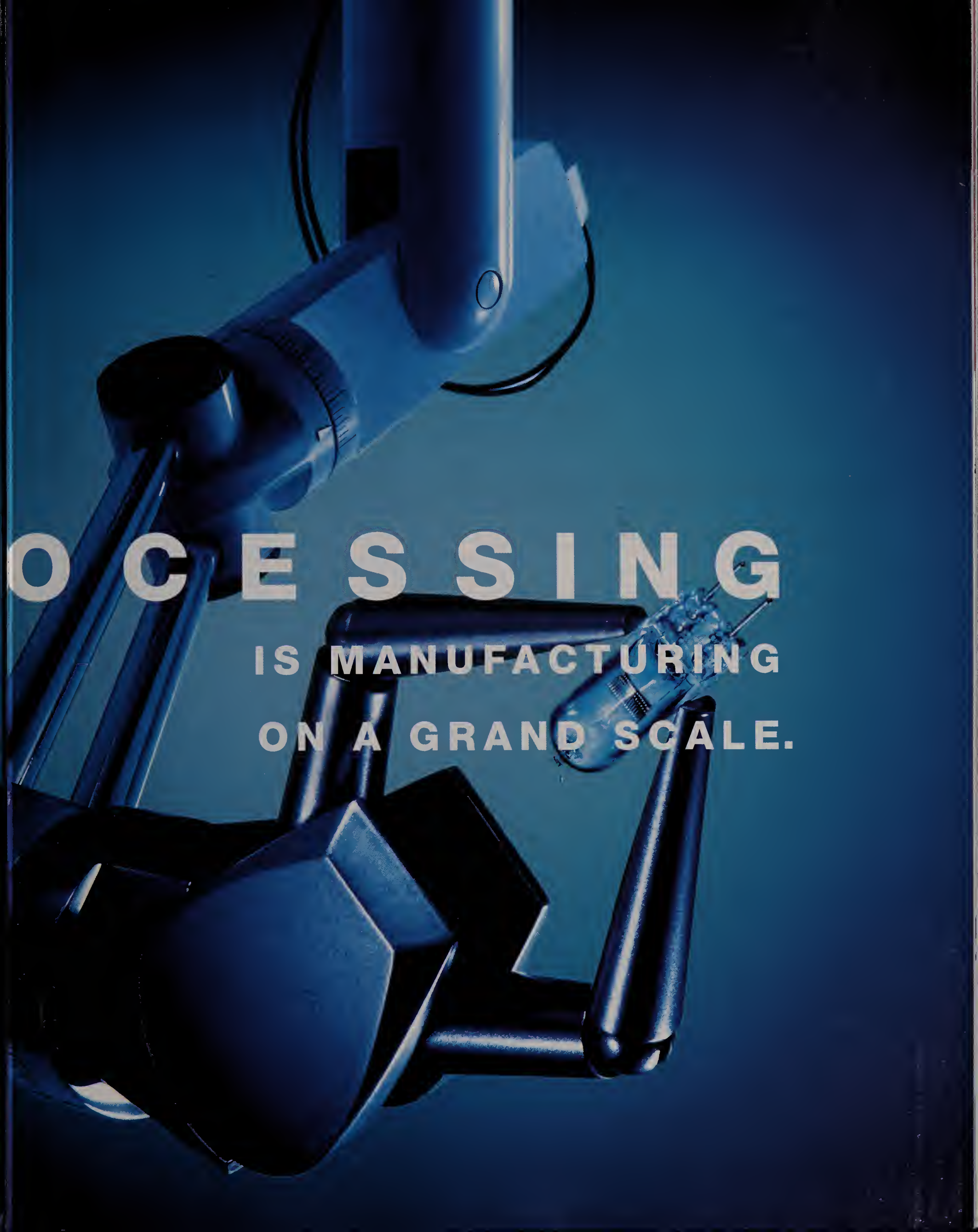
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O P E R A T I N G S Y S T E M S

Nixed for Linux

By Meridith Levinson

THE MASTER OF ILLUSION in the entertainment industry, Industrial Light & Magic (ILM)—George Lucas's visual effects and 3-D animation studio—is undergoing its own metamorphosis and sloughing off longtime partner SGI in the process.

According to Andy Hendrickson, director of research and development, San

Rafael, Calif.-based ILM is in the process of replacing its 600 Unix-based SGI O2 workstations—which it used to render such characters as the gauze-clad antagonist in *The Mummy*, the fearsome velociraptors in the *Jurassic Park* flicks and Jar-Jar Binks



Jurassic Park creatures born of SGI technology.

in *Star Wars Episode I*—with Pentium Four Linux machines. It is also replacing SGI's Unix-based Origin 2000 server with a combination of a Pentium Four computer and Alpha processors that will run Linux from Red Hat.

Hendrickson thinks Linux is the best operating system for the visual effects industry. "It builds distributed computing well. It has rock-solid stability, a very low administration cost, and many years of robustness and testing behind it," he says. ILM counts on its new system getting movies in the can quicker with lower production costs.

ILM's transformation doesn't bode so well for SGI of Mountain View, Calif., whose entire business, especially its workstation business, is ailing. In April, the company reported a \$141 million loss and cut 15 percent of its workforce. Salomon Smith Barney downgraded SGI's stock from neutral to underperforming in July.

It's a tragic downfall for a company that once dominated the visual effects market, and a classic story of a sluggish industry giant blindsided by newcomers. "It's been a long and fruitful relationship," says Hendrickson of ILM's work with SGI. "[But] right now we need more power. We need more simulation. We need to do more work. They don't have a Pentium in their offering, which is unfortunate for them."

The irony here is that SGI has helped the Linux cause in the past by serving up some of its own proprietary Unix code to the open-source community. Now Linux seems to be biting the hand that fed it.

I . T . I N T H E A F T E R M A T H

Recovery Logistics

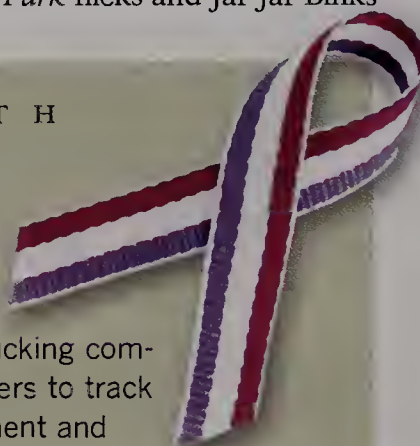
ON SEPT. 11, the Federal Emergency Management Agency (FEMA) sent out a plea to several trucking associations for 1,000 refrigerated trailers to aid in the disaster recovery in New York City. But nobody was sure how that would come together.

"Where do you begin to find 1,000 trailers?" asks Scott Nicholas, logistics analyst for Memphis, Tenn.-based transportation company GST Corp., one of the companies that received FEMA's request. Traditionally, transportation companies use phones, fax machines or CBs to locate drivers willing to help out in emergencies. With those methods of communication spotty at best in New York immediately after the attacks, FEMA needed another means of getting the word out. Nicholas suggested calling Dallas-based TransCore, a transportation IT vendor. TransCore offers a B2B exchange, with e-logistics software

that allows trucking company dispatchers to track freight movement and manage drivers remotely. With that software, TransCore posted FEMA's request to monitors—usually used to post load requests—at truck stops within a 200-mile radius of Manhattan. The monitors flashed an ad calling for help from local truckers and providing a number for dispatchers to call.

"As soon as we did that, phones began ringing off the wall," Nicholas says. Within two hours, 700 trailers were available and ready to move. After 24 hours, the ad had to be pulled—there was too much interest. Nicholas estimates that 95 percent of the drivers didn't even want to be compensated. "If anyone says patriotism is dead, they should talk to those truckers," he says.

—Stephanie Viscasillas



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—Nick Ioli, senior vice president and CIO, A&P



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Off the Shelf

Edited by Carol Zarrow

The Great Leap Forward

Good to Great: Why Some Companies Make the Leap...And Others Don't
By Jim Collins
HarperCollins Publishers, 2001, \$30

WHAT'S THE DIFFERENCE between merely good and clearly great—chest-thumping leadership and bleeding-edge technology? Not so, says Collins, whose new book explores why some companies make the leap from mediocre to meteoric success—and why others can't. Collins, author of the 1994 best-seller *Built to Last*, identifies 11 companies that have made the transition from good to great, and some of those names might surprise you (Walgreens makes the list; Wal-Mart

doesn't). He also identifies some common factors among good-to-great companies, and these may surprise you too. Top executives at these companies, for instance, are less like General Patton or Julius Caesar and more like soft-spoken Abraham Lincoln. And while technology is important to these enterprises, it isn't (to quote baseball great Reggie Jackson) the straw that stirs their

drinks. Technology can accelerate the good-to-great transition, Collins says, but can't ignite it.

All of Collins's conclusions are drawn from a subjective definition of "great"—namely, that only those companies are truly great that can demonstrate 15 years of sustained, above-average stock market results (which is why Circuit City makes the cut but DaimlerChrysler doesn't). There is no accounting for what these

companies actually do, only for what they return to shareholders. A debatable definition, but suspend your disbelief if you must, because Collins's research nevertheless delivers some keen insights into the makings of some of today's most successful companies.

—Tom Field

Loyalty! Leadership! Success!

Loyalty Rules!: How Today's Leaders Build Lasting Relationships
By Frederick F. Reichheld
Harvard Business School Press, 2001, \$27.50

WITH LOYALTY RULES, Reichheld follows up on his 1996 best-seller, *The Loyalty Effect*, which pointed out a link between loyalty and bottom-line profits. In 2001, he applies his loyalty theory to the digital economy—and none too soon. Reichheld, a Bain & Co. director emeritus, maintains that when profits are squeezed and stock prices plummet, loyalty is the only source of competitive advantage. And not just customer loyalty but the employee, supplier and investor loyalty on which customer loyalty hinges.

He hypothesizes that while the Internet has accelerated churn among all four groups, six principles of loyalty (which are outlined in the book) can make the new economy profitable for any company. Thankfully, Reichheld doesn't turn to fly-by-night dotcoms for his loyalty rules. Instead he employs examples from loyalty leaders such as Enterprise Rent-A-Car, Harley-Davidson and USAA. The book is as much no-nonsense advice as it is high-brow theory. A practical Loyalty Acid Test Survey, which should help executives measure and strengthen key relationships, resides in the back of the book and is

CIO Best-Seller List

5.

Ruling the Waves: Cycles of Discovery, Chaos, and Wealth from Buccaneers to
Bill Gates
by Debora L. Spar
Harcourt Trade Publishers, 2001

4.

Who Moved My Cheese?
by Spencer Johnson
The Putnam Publishing Group, 1998

3.

The Tipping Point: How Little Things Can Make a Big Difference
by Malcolm Gladwell
Little, Brown & Co., 2000

2.

The Elusive Quest for Growth: Economists' Adventures and Misadventures in the Tropics
by William Easterly
MIT Press, 2001

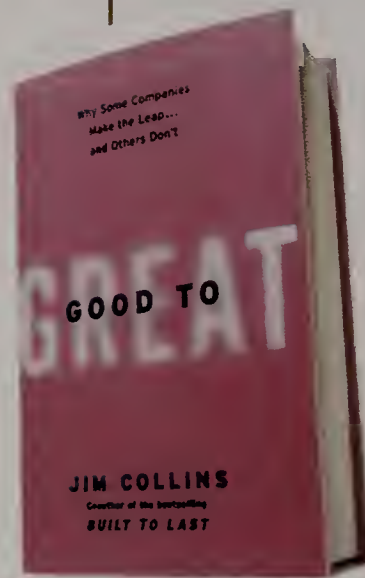
1.

Jack: Straight from the Gut
by Jack Welch
Warner Books, 2001

SOURCE: SEPTEMBER 2001 DATA COMPILED BY WORDSWORTH BOOKS, CAMBRIDGE, MASS.

available for free on Reichheld's website, www.loyaltyrules.com. One does wonder how the companies profiled are doing today and laments the fact that *Loyalty Rules* didn't come out a year (or two) ago.

—Stephanie Overby



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UPDATE

Return of Servers

By Tom Wailgum

I HAD THE GOOD FORTUNE of returning to the U.S. Open, following up on my 1999 visit to see the IBM E-Business Solutions group's work in Flushing Meadows, N.Y. (see "More Than Fun and Games" at www.cio.com/printlinks).

Hewitt capped the night I was there.

But not *all* was the same as it had been. The Open website (www.usopen.org) boasted new wireless features—match updates and live traffic reports delivered to Internet-enabled cell phones, pagers and PDAs. And before the matches began, journalists attended a briefing with Paul Horn, senior vice president and director of IBM research. He spoke of IBM's embracing

open standards at this year's Open, in particular testing Linux-based servers as the OS infrastructure to handle all the website traffic (172 million page views and 2 million unique visitors during the two-week event). He also detailed his group's new research areas, such as autonomic computing systems—self-managing system similar to human bodies with brainlike response times. This unfathomable speed would make everyday PCs that much faster—and more reliable. He also demonstrated a souped-up Palm device with speech-recognition capability; we watched as it translated his questions from English to Japanese and German. He cautioned, though, that widespread adaptation of such toys would take a while. I guess we'll just have to come back again next year....



Pete Sampras, like IBM, is a fixture at the U.S. Open.

That article profiled the group (techies who don't sleep much), the technology (expensive and powerful toys for said techies) and the event (big-time sporting gigs). Two years later, the techies looked as tired as ever; the previous night's thrilling match between Andre Agassi and Pete Sampras that ended in the early morning had taken its toll. The technology—including four xSeries e-Servers that ran the show, plus much more—was impressive as it was before. And the event, of course, was just as exciting—a phenomenal match between Andy Roddick and eventual champ Lleyton

ASSET MANAGEMENT

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HARD DRIVE defragmentation can help your company keep costs down and defer expensive hardware upgrades in the Windows NT and 2000 environments.

Fragmentation occurs when files are updated often—new data is stored in any free space, which may be non-contiguous. Fragmented files require extra head movement in reading, so they take significantly longer to access than normal, according to "Disk Defragmentation: Hidden Gold for the Enterprise," a study by Framingham, Mass.-based IDC (a sister company to *CIO*'s publisher, CXO Media). But use of defragmentation software can help avoid system delays and unresponsiveness that translate into lost productivity and frustration.

IDC's study and previous studies by National Software Testing Laboratories, an independent hardware and software testing organization based in Conshohocken, Pa., show that a defragmented disk can increase overall system performance from 20 per-

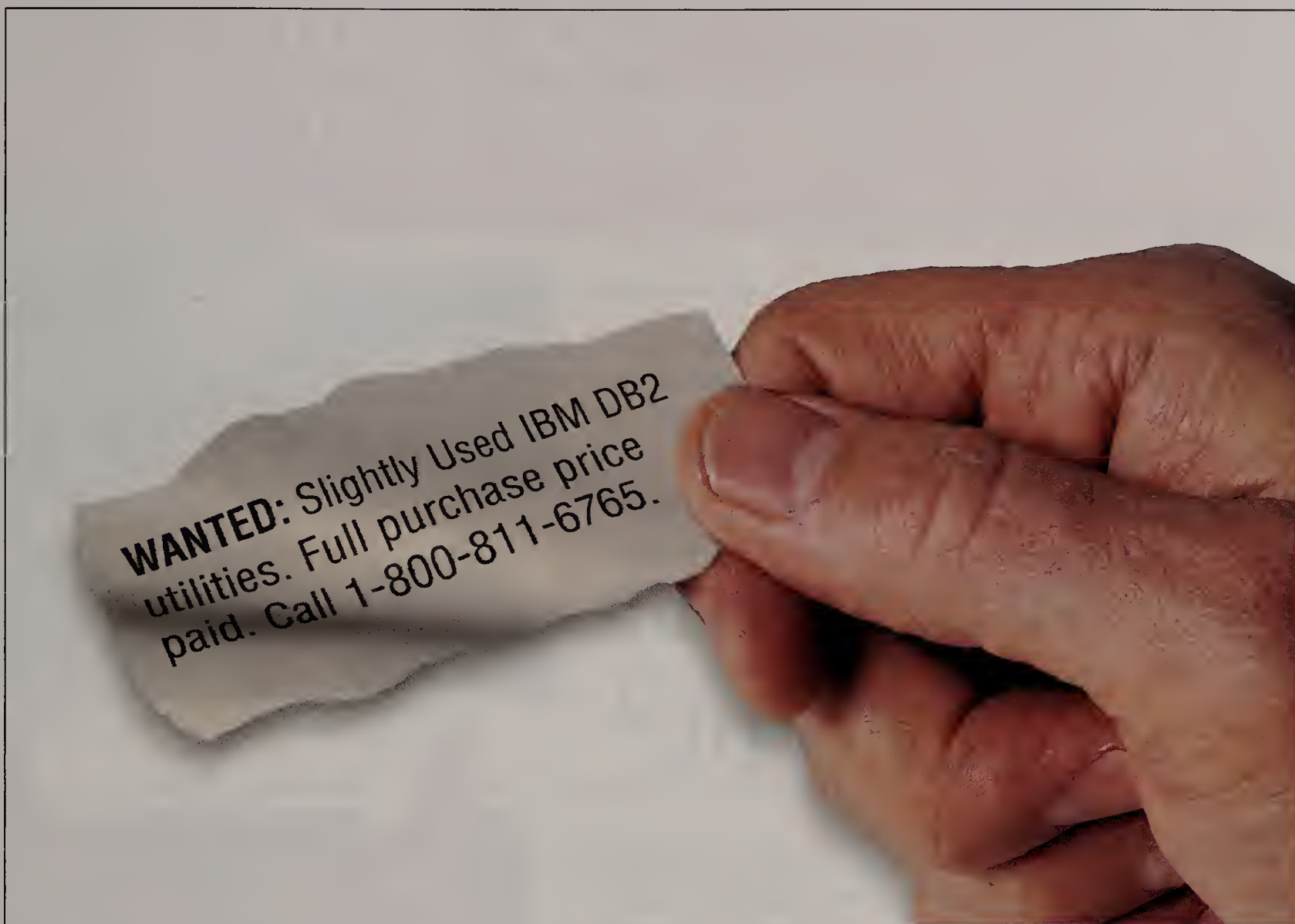
cent to 80 percent under Windows NT, with even greater savings on Windows 2000.

Some popular tools include Diskkeeper from Executive Software International and PerfectDisk 2000 from Raxco Software. Vadim Eijvertine, an assistant vice president in the security division of New York City-based Citibank, says everyone in his division has begun using Diskkeeper with significant system improvements.

"Before we started defragmenting regularly, the computers would hang up often; some would hang indefinitely on certain applications," he says. "Now my computer responds about 20 percent faster and lets me keep more windows open at the same time without hanging up."

Defragmenting costs significantly less than prematurely upgrading hardware. For 1,000 workstations and 10 servers, hardware upgrades would cost \$3.2 million; the cost of defragmentation software plus associated IT labor is just \$27,710, according to the IDC study.

—Karen D. Schwartz



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What's the Point?

PowerPoint reduces conversation to simpleminded bullet points. If you want to get your group talking again, try giving one-way presentations the boot.

BY DAVID S. CLARKE

DID YOU READ the recent article on the *Darwin* magazine website, "Is PowerPoint Too Dumb for Words?" (see www.darwinmag.com/connect/opinion/column_index.html). It cleverly depicts the view that extensive use of PowerPoint presentations is "dumbing down" our thinking, effectively reducing our thoughts and communications to bullet points. This viewpoint brought back a vivid memory for me. As CIO for a global company a few years back, I actually banned PowerPoint presentations in my team for a while. My reasons weren't quite as arch and philosophical as those presented in that article, but they were on a similar track. I simply got bored watching the darn things! Every presentation, whether generated inside the company or outside, looked exactly the same, had similar depth (which is to say, none) and was so homogeneous that I could have delivered it from memory without ever having seen it before.

I didn't blame the whole thing on the PowerPoint tool itself. Microsoft makes a fine product, and the same thing could have happened if we all used Freelance or Visio. The problem was that our attention span had become so limited that our level of conversation had degenerated to this bullet point way of talk-



ing and thinking. We were presenting to each other, not talking with each other. We didn't know how to engage people in other ways, so we took the few minutes we got and gave them the *Reader's Digest* version of the idea we wanted to convey.

The example that sticks most clearly in my mind is a presentation about a new data center that was being planned in one of our locations. The team displayed a laudable command of the new features of PowerPoint, and they delivered a beautiful pitch with animation, sound and a touch-sensitive wide screen display. The problem was that the presentation didn't say anything about the data center project that I couldn't have said about any other data center project. The team members told me it would have security, fire suppression and central monitoring—things every data center has. What they didn't do was *talk* to me about their project so that I could understand what they were really doing and why, so I asked for

ILLUSTRATION BY PHILIP ANDERSON

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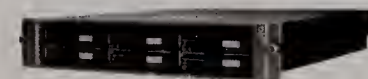
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another meeting without the fancy pitch—a chance to just talk.

It's a good thing I did, because I heard a much different story without all the pyrotechnics. One thing I learned in conversation was that we were building the data center over a lab that built potentially explosive fuel cells. This didn't sound like a good idea to me, so we quickly changed the location plan. Another important thing I learned was that my team had a great deal

organization some stress at first by dictating that people not use a tool they enjoyed using. They probably felt that I was limiting their creativity. As we worked through the data center project, though, the weaknesses of presenting to each other instead of talking with each other began to dawn on them. We started having many more interactive team meetings. We experimented with different seating arrangements to facilitate

conversation instead of presentation. We even designed new office space with small groupings of seats so that team members could spontaneously gather to talk. I banned laptops in my staff meetings because I found people were answering e-mail and working on other assignments instead of listening to each other. I also

After I banned PowerPoint, the weaknesses of presenting to each other rather than talking with each other became even more clear.

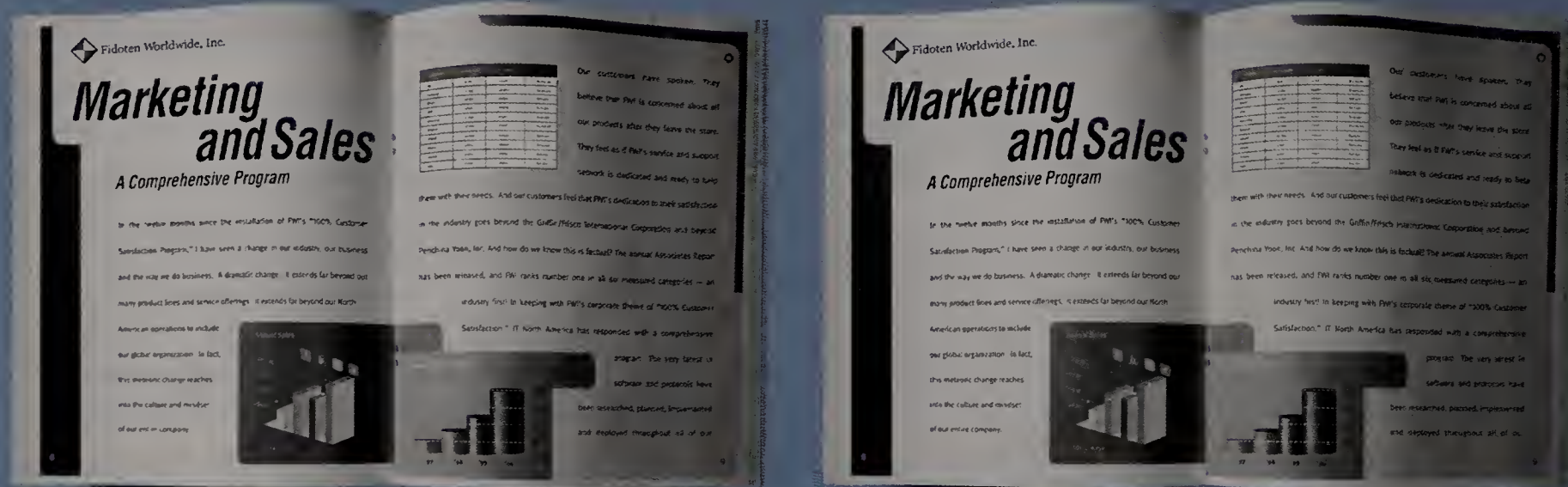
of pride and vision in their view of data center operations. They weren't just thinking about a room; they were envisioning a major change in how we ran computer operations in that region of the world. Once we ironed out the wrinkles in the project, we used their vision as the template for operations in other regions. Again, their bulleted presentation had deprived me of this valuable insight and the recognition they deserved for developing it.

As I reflect back on this experience, I can see that I caused the

kept my staff meetings almost completely oriented to round-table conversation instead of formal topics or, worst of all, unilateral task assignments by the team leader. I did have to delegate, of course, but I was more interested in having the whole leadership team learn how to think and talk our way through problems than I was in having someone stand and report something to us from their PowerPoint-generated list.

I did eventually rescind my ban on PowerPoint. Sooner or

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later it would have started to sneak back into use, and after a few months, I had made my point. But the new ways we had learned to communicate remained intact. With the added creativity available in a graphics tool, some members of my team became quite proficient at creating animated storyboards that entertained and informed the presentation audience and interactively engaged teammates in conversation at the same time. Our meetings became collaborative work sessions. Even outside visitors were told beforehand that we expected a work session to be a productive, interactive conversation and not a one-way recitation of generic factoids. As a result, our business partners became more engaged in thinking with us, and we came to value more highly those that went beyond telling us about their wares and actually contributed to the development of our strategies.

PowerPoint isn't the devil's workshop, and I'm not yet ready to found the Society for a PowerPoint-Free World. (You can still send your donations to me care of *CIO* in anticipation of that event.) Tools do make a difference, though. If we want meaningful dialogue and conversation, we have to use tools and methods that support that. Build collaborative workspaces instead of amphitheater-style conference rooms. Structure your meetings as free-flowing con-

versations (think dinner party) instead of one-to-many indoctrination sessions. Spend time scribbling on the board with a teammate instead of crafting the perfect presentation.

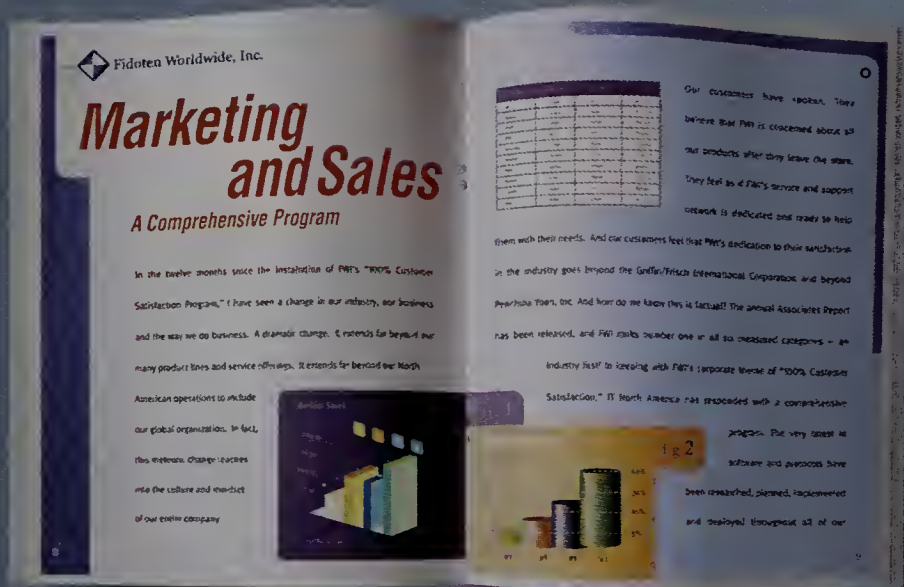
Essayist, poet and philosopher Ralph Waldo Emerson said, "All good conversation, manners and action, come from a spontaneity which forgets usages and makes the moment great. Nature hates calculators; her methods are saltatory and impulsive." To surround yourself and your team with Emerson's "good conversation," reach out to people, put aside the computer, and just talk. **CIO**

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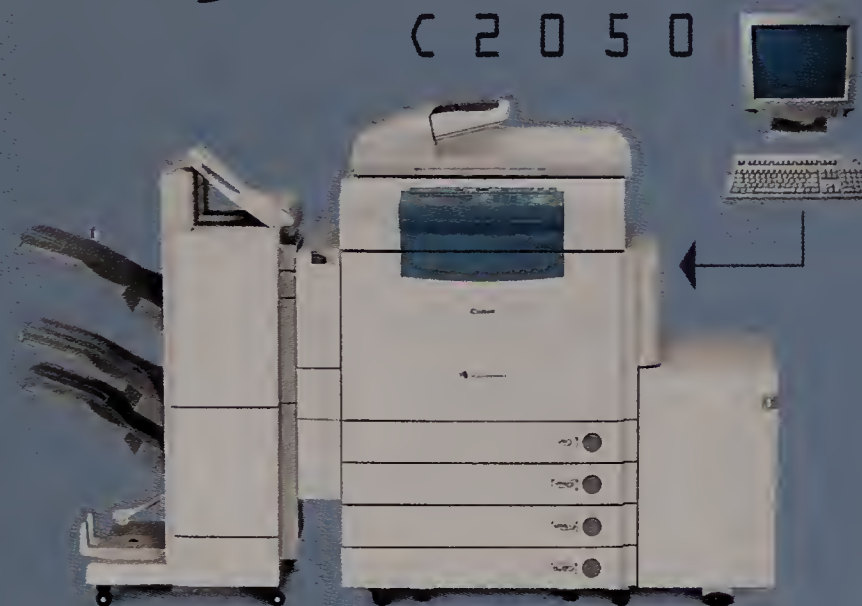
This discussion originated on the **CIO BEST PRACTICE EXCHANGE**, a private, online forum. To learn more about the exchange, contact Executive Web Editor Martha Heller at mheller@cio.com.

Do you have ideas of your own to share with fellow CIOs? Send them to Columns Editor Katherine Noyes at knoyes@cio.com.

David S. Clarke is director of IT operations and infrastructure for GM North America in Detroit. You can converse with him electronically (no PowerPoint attachments, please) at david.s.clarke@gm.com.



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Career Counsel

Mark Polansky Offers Advice to Aspiring CIOs and IT Managers

Switching Tracks

Q: I realize that you've been asked many versions of the CIO career-track question in the past. My particular track has included senior loan officer and treasury manager for a bank. Currently, I'm the senior sales executive for a Web-based software company. I have an MBA, and I'm CCM (certified cash manager) certified.

While salary and bonuses are very adequate, I've developed a keen interest in information technology and would like to make moves toward that field. What would you suggest that I gravitate toward careerwise in an effort to move more closely to a CIO type of position?

A: Your goal of becoming a CIO represents the pinnacle of a career in information technology, which in your case dictates a career switch—and starting over, more or less, in both position and compensation. Your banking and financial expertise is not generally relevant to an IT career, and your software sales experience simply has not prepared you for what lies ahead of you as an IT professional.

I recommend going back to school, at least on a part-time



basis. If you already have your bachelor's degree, give serious consideration to an executive MBA with an IT concentration: These programs are usually accomplished on alternating weekends plus a week or two during the summer, and there are also several very worthwhile distance learning MBA programs available via the Internet. In either case, acquire enough programming exposure to get by, and focus your curriculum on a balanced combination of related IT management and business topics.

When you start your IT job search, think about financial institutions and corporations where your newly acquired IT knowledge, coupled with your prior experience in the cash management and treasury functions, can give you an opportunity to make up for lost time.

FOCUSING EFFORTS

Q: I am a senior applications developer with good experience in

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all areas of software project management and heaviest involvement on the development side. Also, I will soon graduate from a top 25 business school with a master's degree in management of information systems. This is an MBA-type program tailored to the needs of aspiring CTOs or Big Five IT consultants, with particular emphasis on e-business and general information technology management issues.

Since there are no career advancement nor promotion opportunities at my current company in which I could use my newly acquired knowledge, I am considering my next move toward the end goal—a CTO or CIO position. Where should I focus my search efforts?

A: First things first—do you want to be a CIO or a CTO? On the corporate side, where technology is applied to the information and transaction processing needs of the enterprise's day-to-day operations, it is the CIO who holds top-line responsibility for all strategic and tactical facets of IT. The CTO—who usually reports to the CIO—is tasked with evaluation, acquisition, deployment and sometimes the support of new tech-

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nologies and the development and implementation of new technology-based IT initiatives.

Given your current position as a senior applications developer, coupled with an MBA-like master's degree focused on general IT management issues, I would conclude that you intend to pursue the CIO career path. As a future CIO you should be looking for opportunities now that will provide you with project and staff management experience, and as much exposure to business problem solving and collaboration with the business unit staff as possible.

EXECUTIVE SUMMARY

Q: I am applying for a CIO position with a large company in Silicon Valley. They have asked that I submit an executive summary along with my résumé. How does this differ from a comprehensive cover letter describing objective, interest, accomplishments and differentiators? Is there any recommended format for an executive summary?

A: I have never seen a recommended format for an executive summary, a document that is generally used as a higher-level alternative to a résumé. Think in terms of a professional biography that might be used to introduce you as a conference speaker.

An executive summary is written in narrative prose rather than the formatted structure of a résumé. It should cover the highlights of your career with most of the detail omitted, plus your education, important certifications, memberships and affiliations, and any significant honors and recognition—all while sticking to a one-page limit. Extracurricular, vocational and community activities are sometimes included, but personal and family information is a definite no-no in an employment situation. For an example, refer to my executive summary at www.cio.com/printlinks.

MBA PURSUIT

Q: I feel that there is a significant level of commitment required in pursuing an MBA degree. If actively searching for a CIO, CTO or vice president of information technology position, is publicizing the MBA-in-progress detrimental to the search for job candidates?

A: You have asked about a classic riddle. And as always, I vote for full disclosure. Whether any particular interviewer perceives your pursuit of a desirable educational credential as a potential distraction is not nearly as significant as the fact that all interviewers will react negatively to your concealing your MBA studies.

I recommend putting it discreetly on your résumé so that the issue is on the table and can break the deal before the first date. The key point here is your track record of successes and accomplishments, and the impact that you can create at your next employer. The thinking résumé reader and interviewer will reason that if you have done well elsewhere, then you can continue to handle both your vocational and academic challenges while working for him. In an interview make it perfectly clear, however, that success on the job comes first and foremost.

There will always be a chance to take a course over, but once a project fails or a business opportunity is gone it may be gone forever—and you don't want to be gone with it. **CIO**

Mark Polansky is a managing director and member of the advanced technology practice of Korn/Ferry International in New York City. He also is the chairman of the Greater New York Chapter of the Society for Information Management. The Web-based Executive Career Counselor column is edited by Online Research Manager Kathleen Kotwica (kkotwica@cio.com).



PHOTO BY ANDRE SOUROUJON

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Educate your users about the limitations of new technology before they come to you with unreasonable requests, says Rockford Health System CIO Dennis L'Heureux.

The Burden of Great Expectations

Tame the CIO job by learning to manage up and around and to just say no
BY POLLY SCHNEIDER TRAYLOR

LIKE MOST CIOs, DON RAWLINSON IS omniscient. Not only does he have complete textbook knowledge of every computer system ever created, he also has a genetically encoded radar for detecting and understanding next year's technologies. That's what his coworkers believe, anyway. When a colleague at the U.S. Army School

of Aviation Medicine in Fort Rucker, Ala., bounces into Rawlinson's office with a question about the latest innovations in (insert technology of choice), the CIO is happy to share his fountain of wisdom. But often as not, he will have to say, "I don't know a thing about it."

Ah, the joys of being a CIO. Not only must you

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have all the answers, but you also must complete every project on time and under budget, even as users squeeze every moment of your staff's day with the same mundane tech support questions. If someone's power cord is unplugged, guess who gets the call? "Sometimes I think about buying a Dunkin' Donuts," quips Dennis L'Heureux, corporate vice president and CIO of Rockford Health System in Rockford, Ill.

Managing expectations has never been easy in IS, but the problem seems to be worse than ever. The need for leadership on how companies make strategic use of IT has made the CIO job infinitely more complex and political. And tough economic times have only bolstered the demand for ROI, as many CIOs have tighter budgets and smaller staffs.

It is possible for technology leaders to take control, however. Above all, you need to foster trust within your senior executive team. Become a mediator when conflicts arise. Learn how to manage up, delegate, prioritize and encourage responsibility in others. Rawlinson views his job as one of research, integration and execution of technology projects—he doesn't have to be the all-encompassing tech expert. Still, some days he's perplexed by the eclectic nature of his job. "I will be on a ladder one day, the next I could be going to Washington for a meeting with high-level officers on knowledge management," he says.

Look Out for Number One

First question: Are you the problem? Always saying yes to requests and making promises you can't keep will inevitably result in disappointed users and botched projects.

Paul Thorn, manager of the management information technology office for the city of Annapolis, Md., readily admits a proclivity toward overextension. When he is uncertain whether he can take on another deliverable, Thorn uses his three-person staff as a sounding board. "They are quite critical...and bring me back to earth," he says.

When L'Heureux has to make a decision on a request, he goes through the following thought process: 1) Say no because the

political consequences are too high if the slightest thing goes wrong; 2) say yes, but spell out the need for more time or resources; 3) accept the risk and agree to the terms. The bottom line is that CIOs need

Avoid the Expectations Trap

How CIOs stay out of the mire

- **Learn how to say no to impossible requests. If that's not possible, bargain for more time and resources.**
- **Delegate—to a deputy or other IS staffers.**
- **Get to know your executive peers. It's easier to build IT systems for someone with whom you've built a relationship.**
- **Tell users about new technology rather than waiting for them to come to you.**
- **Set up a quick-response help desk—and be tolerant of stupid user questions.** —P.S.T.

the guts to make the decisions they think will be successful, regardless of what peers and even superiors say is a priority.

Many of these overload problems can be resolved with better delegation. Beverly Lieberman, president of IT at executive recruitment company Halbrecht Lieberman Associates in Stamford, Conn., believes that CIOs often dig their own graves by seizing greater responsibility—such as taking over the company's Internet channel—to gain clout or power in the organization. As it is, most CIOs spend far too much time on tactical issues and meetings (up to 90 percent of their days, says Lieberman) rather than strategic thinking and building relationships. "CIOs need to hire a tactical CIO under them," she says. (For more on deputy CIOs, see "IT Takes Two," Page 88.)

Feel Their Pain

After finishing the self-inventory, take stock of your relationships with other senior players in the organization. In his previous job as the IT development director at Southeast Frozen Foods in Miami, Joe Gagliardi discounted a newly hired COO—a mistake, he says, that eventually led to a power struggle over a software package, the COO's decision to cut IT spending and, ultimately, the defection of Gagliardi's staff. Gagliardi left soon after for another job. His lesson? He should have spent more time getting to know the new COO and developing a working relationship from the beginning.

Now, as CIO at Miami-based shoemaker Unisa, Gagliardi frequently takes fellow executives to lunch, learns about their families and interests, and tries to understand their goals as they relate to technology. "I have made an effort here to [work with] every decision maker and executive," Gagliardi says. "While I couldn't necessarily satisfy all of them, at least I understood where they were coming from."

It's a dirty word, but sometimes CIOs have to play the politician. L'Heureux describes his job at Rockford—a health-care organization consisting of a hospital, clinic, home-care agency, health plan and foundation—as one of "bridge-building." In contrast with most other industries, his end users—doctors—are targeted directly by vendors. To tone down the vendor rhetoric, L'Heureux offers clinicians regular presentations about technology. The technique helped mollify a physician who returned from a conference where he had seen a voice-recognition software demo. "He was convinced that voice recognition could work and requested that we begin right away," L'Heureux recalls. "A simple no is rarely accepted." L'Heureux invited the doctor to a discussion on voice-recognition technology that showed why the technology was not yet ready for prime time.

L'Heureux also cochairs (with a physician) an IT advisory committee that meets monthly, comprising directors and doctors from across the organization.

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Teach a Man to Fish

As CIO, you're expected to serve the customer at all times. But there comes a time when it's OK to ask users to put forth a little effort in return. CIOs often complain of epidemic malaise among their users when it comes to learning and troubleshooting. "It amazes me that many are incapable of performing the simplest of computer tasks, but you put the Internet browser on the screen and they're a video game professional," Rawlinson says. The users at Fort Rucker are largely flight medic instructors with little computer experience. Even though Rawlinson advises them to sign up for computer classes at the education center on the base, few do. This lack of motivation frustrates Rawlinson, but he hasn't given up on education. He often passes around magazine articles that discuss relevant apps and implementation. "I've been able to be more successful with that approach," he says.

Gagliardi has a different attitude when it comes to intractable users. Fed up with equipment abuse in the company's warehouses (\$5,000 scanners have been run over by forklifts more than once), Gagliardi no longer seeks to force users to change their behavior. "I don't believe in trying to manage every level of the organization," he says. "If I have good support and trust with [executives], the other problems take care of themselves."

Sometimes managing expectations is simply a matter of effective project management and planning. Sure, it takes courage to confront your boss and explain why you can't grant his wish for a website redesign project in 90 days, as Rawlinson had to do last fall. But in the end, that's what your boss *expects* you to do. "People are reasonable," Rawlinson says, relieved that the redesign was finally completed after two iterations and seven months. "They just need to see the whole picture." ■

Polly Schneider Traylor (polly@traylor.us.com) is a freelance writer in Boulder, Colo., who specializes in technology, health care and business. CIO Senior Writer Stephanie Overby contributed to this article.

MANAGEMENT BRIEFS Decision Making

Had We But World Enough And Time

Abundant data and the need for speed are two characteristics of our time. Then do modern managers usually make quick, high-quality decisions? Not according to a study by Kepner-Tregoe, a management consultancy based in Princeton, N.J. "Despite the existence of more and better information than ever before, time pressure prevents

Decision Dilemma: Speed Versus Quality

In which areas has the emphasis on fast decision making caused the quality of decisions to decline? The 479 managers responding to the December 2000 Kepner-Tregoe "Survey on Speed and Quality in Decision Making" answered as follows:

Personnel/HR	27%
Budgeting/finance	24%
Organizational structuring	22%
Quality/productivity	20%
IT selection and installation	17%
Process improvement	17%

decision makers from gathering all that they need and from sharing it," according to Peter Tobia, author of "Decision Making in the Digital Age: Challenges and Responses," which Kepner-Tregoe released in December 2000.

Surprisingly, a majority of the survey's respondents contradicted the conventional wisdom about information overload, saying that more and better data is actually a good thing. Rather, it's the age-old problems of organizational politics, lack of agreement on objectives and changing priorities that keep decision making in the dark ages.

"The survey shows that there is a cultural lag between sophisticated technology and the ability of the manager to take advantage of it," says Tobia, Kepner-Tregoe's director of business issues research. To make full use of IT's data-gathering and sorting capability, Tobia recommends that companies institute a shared, systematic approach to decision making.

—Daniel J. Horgan

Checklists and Balances

Decision-making methodologies don't have to be complex. Dick Fishburn, CIO and vice president of Corning Inc., the Corning, N.Y.-based advanced materials manufacturer, uses a simple but powerful tool to keep his cool in the face of demands to act quickly: a checklist.

"A checklist comes into play because certain things always need to be looked at to ensure a good decision," he says. "It is very similar to an airplane pilot. He has a list to check before he lifts off, and every step is crucial and must be examined properly."

Fishburn's checklist is not so much a piece of paper as it is a process. He uses it as a training tool for IS workers. "You are training to create a mental model so [your team] knows what to examine in order to reach a quality decision," he says. It's a method for keeping the IS department out of the deep end of the flood of information.

—D.H.



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HANDS ON | SUSAN H. CRAMM

The Dark Side of Outsourcing

Farming out the best work will hollow out your organization

MANY ORGANIZATIONS ARE A SHELL of what they once were or a shadow of what they could be, because they give the best work to outsiders. I don't think anyone intentionally outsources the best work—that is, the most important projects and the critical business relationships—but it happens all too often.

Correctly applied, outsourcing is a lifesaver in navigating the changing seas of business and technology. Fortunately there seems to be an endless supply of contractors and consultants. My CIO clients have plenty of experience in outsourcing. In fact, about half of their personnel work for somebody else, on average.

That last thought always gives me a chill. At the end of the day, half of their people don't work for them—they *work for somebody else*. Those employees are working to achieve another company's long-term vision and are part of somebody else's culture and career development plan. This reality hit home years ago when, as an executive at PepsiCo, I hired a consultancy to manage a PeopleSoft implementation. The software was new and the market demand for expe-

rienced project managers was high. At a critical point, one of the consultancy's partners informed me that he needed to reassign the project manager to an apparently more important or better paying client. I pulled out my PepsiCo card, but the partner didn't seem to care. In the end I won but only by hiring the contract project manager away from the consultancy.

The incident taught me that a leader's success rides on the back of a few key employees. Those are the people who know your business and your systems, who have formed good relationships with your customers and vendors, and who are disciplined enough to see things through. To do outsourcing right, you had better know what you wouldn't give away. You need to define an "insourcing" plan that identifies the work critical to your company's strategic intent.

Insource the Important Work

Most of us would agree that subject to real-world constraints, the following roles and capabilities should not be outsourced:

- Strategic applications and technology planning.
- Investment, financial, HR, project and vendor management.
- People with in-depth knowledge about existing business, applications and technology infrastructure.
- Senior, customer-facing relationship managers.

The real-world constraints that force us to outsource more than we would like include missing skills, inadequate resources and a lack of organizational mass necessary to maintain a capability internally. The critical mass problem forces some companies to outsource virtually all IT functions. But in compensating for limited resources, many managers go further than is healthy for their organizations. Project work, which is variable by nature, goes to contractors, while internal people end up doing only support work. Since project work is generally the best work, in terms of strategic impact and creativity, employees who value this work will leave. Those who remain will do a good job running the day-to-day tasks but will be unable to lead a major change.

When consultants are running the show, you've reached the dark side of outsourcing. When the interests of your company and the service providers diverge, you'll pay the price. To find out whether you're entering the dark side of outsourcing, look for the following clues:



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- Most of your employees are performing maintenance and support work.
- Strategic, risky and large projects are consultant-led.
- Your employees are being managed by consultants.
- Consultants are driving one or more of the critical governance processes—strategy, architecture planning and investments.
- Your customers are interacting with consultants more often than with employees.

Companies get into trouble when they do not draw hard lines around work that should not be contracted out. An insourcing plan will ensure that your folks remain in charge, while contractors will be used only

date by which the consultant will leave or transition to a purely coaching role. If you are (rightly) outsourcing support work, such as maintenance, ensure that the contractors report to one of your analysts. Supervising support workers is a wonderful developmental opportunity for analysts who want to move into a project management role.

Concentrate on the Core Employees

Once you have decided what work should not be outsourced, give some serious thought to how you will retain (or, if necessary, attract) your best talent. In *The Age of Unreason* (Harvard Business School Press, 1991), management philosopher Charles

she ultimately wanted to start a small business in an area entirely unrelated to IT. With this knowledge, he was able to identify internal positions that would help her develop the skills necessary for success in a small startup. The concept of matching responsibilities with interests, known as job sculpting, requires that managers do more of what I do as a coach. Managers need to spend one-on-one time discovering what their people like and dislike about their jobs, helping the employees become aware of their underlying interests, and understanding how to align the interests of employees with that of the company.

Managers should spend less time on the other two groups, according to Handy. The flexible labor force is motivated by fair pay and the flexibility to balance work with other interests. Members of this group may have transitioned from the professional core and may move back to the core if their priorities change. You can use skills training to keep this group up to speed. The contractual fringe is paid for results. It is important to compensate members of this group fairly and specify up front the mutual expectations for the relationship. Don't bother trying to get them to affiliate strongly with your organization; they work for somebody else.

Focus your insourcing plan on the critical work and key employees in your organization. Think about how to deepen your relationship with these few people—to touch their hearts as well as tap their skills. In Handy's words, "These are the people who are essential to the organization. Between them they own the organizational knowledge which distinguishes an organization from its counterparts. Lose them and you lose the organization." **CIO**

Susan H. Cramm, former vice president of IT and CIO at Taco Bell and executive vice president and CFO at Chevys, a Taco Bell subsidiary, is president of Value-dance, an executive coaching firm based in San Clemente, Calif. She can be reached at shcramm@aol.com.



PHOTO BY CHRIS CORSMER

To do outsourcing right, you had better know what you wouldn't give away. You need to define an "insourcing" plan that identifies the work critical to your company's strategic intent.

as additional arms and legs or for expertise when your organization is too small to hire and retain the best.

There are many ways to outsource safely. If you are missing important technical expertise, ensure that your people work side by side with the consultancy's technical gurus. If your group lacks management expertise, partner the contract project manager with the employee whom you want to lead the function in the future. Be sure to explicitly identify skills transfer as a key objective of the relationship with your outsourcer.

Short-term needs can be a staffing nightmare, but don't take the easy way out. Rather than viewing contingent labor as a stopgap, use outsourcing to free up your people for development. If you need to staff a critical project quickly, transfer one of your workers from a less important project to lead the new one. Give the less important task to a consultant—teamed up with a rising star whom you wish to develop. Set a

Handy identifies three groups of people in organizations. The first is the professional core, essential to your company's success. The second group, the flexible labor force, performs essential activities on a part-time or temporary basis. The third group is the contractual fringe, which does all the nonessential work. Each of these groups has different expectations and should be managed differently.

Members of the professional core are motivated by working in flat, collaborative organizations where they are compensated based on the group's results and given some kind of career promise. These are the people you want to retain. This is where you should invest your leadership energies.

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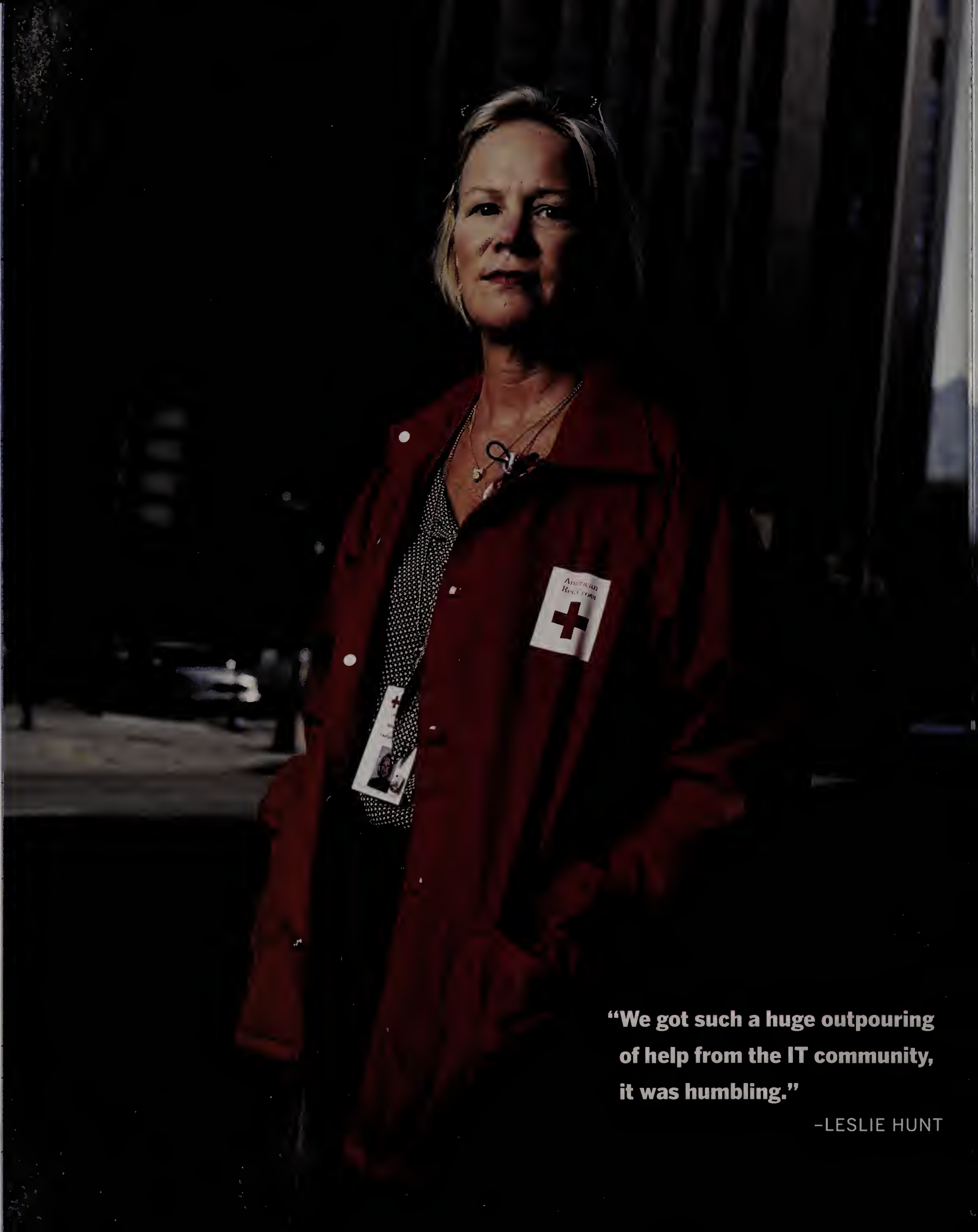


First, everything stopped.



We gaped at the television. We held our breath.

Then, inevitably, the world began to turn again, revealing a landscape cruelly remade. ★ In our first story, we profile two CIOs coping with the aftershocks of the Sept. 11 attacks: Avi Duvdevani, who on Monday, Sept. 10, was starting his second week as New York City's acting CIO, and Leslie Hunt, CIO at the American Red Cross of Greater New York, who as the week began was working on a CRM project. ★ In our second story, "Where Do We Go from Here?" (Page 77), we ask six experts how CIOs should begin to think about this new and unhappy world and how they can redefine their roles.



**“We got such a huge outpouring
of help from the IT community,
it was humbling.”**

—LESLIE HUNT

AT THE CENTER OF A NEW WORLD

On Sept. 11, two ordinary people—New York's new acting CIO, and the local Red Cross' IT leader—rose to an extraordinary occasion, a time when every action counted. Here's what they did and where they go from here.

BY STEPHANIE OVERBY AND SARAH D. SCALET

LESLIE HUNT

CIO AT THE AMERICAN RED CROSS
OF GREATER NEW YORK

NEW YORK—For more than a week following the Sept. 11 attack, Leslie Hunt was described as “the tall blonde in the red jacket with all the answers.”

Standing in front of the entrance to Red Cross headquarters on Manhattan's Upper West Side, wearing a Red Cross windbreaker, the CIO handled thousands of questions as New Yorkers found their way to the building with the red cross emblazoned on its facade.

“I've got this infection—can I still give blood?”
“I brought a box of socks. Who do I give them to?”
“Can you use these computer parts?”

“Clearly I'm blonde. Clearly I'm tall. And I was wearing a red jacket,” says Hunt, 49, who stands at

5 feet, 8 inches. “Did I have all of the answers? No. But I knew how to find them.”

Hunt's efforts were critical in the early relief efforts of the Greater New York Red Cross chapter. “It wasn't my [regular] job to go out there and organize everything, but it needed to be done, and I just did it. I arranged for the manning of shelters. I made sure food was being prepared. I directed volunteers,” Hunt explains.

Her IT-specific efforts included ensuring e-mail and Internet services stayed up and working, setting up databases to organize information about the people available to staff the various relief efforts, and importing data to the financial development software to track the flood of donations coming in online and off.

Hunt and her small IT team saw some serious return on their investment of time and labor following the attack, although it's not the kind of ROI

one usually associates with the CIO role. According to a memo from Red Cross CEO Bob Bender, between Sept. 11 and Sept. 30, 19,490 Greater New York volunteers and Red Cross employees served 3,839,865 meals and snacks, conducted 17,540 crisis counseling sessions, provided 15,848 health service contacts, responded to 67,122 calls to the help line, opened 14 shelters housing 371 people and operated 30 service delivery sites.

First Response

ON SEPT. 11, HUNT WAS GETTING ready for work in her apartment just a few blocks away from her Amsterdam Avenue office on the Upper West Side of Manhattan. Since becoming the first-ever CIO of the Greater New York chapter (the largest in the United States) in 1999, she had been making strides in the paperbound company. She was devising a plan in conjunction with the Metropolitan Atlanta Red Cross Chapter for a much-needed CRM system with an ERP layer, and that morning she was thinking about upgrading her local and wide area networks. She'd just signed off on a strategic plan for her department, knowing that it was months and dollars away from approval, not to mention execution. Also in her thoughts: She'd let go of a staff member because of budget cutbacks in July, and her small group of workers had been feeling the strain.

Then it happened. "I was looking in the mirror, and I could see the reflection of the television," she remembers. "I saw the plane hit the building, and I thought, Why are they showing *Towering Inferno* so early in the morning? I walked toward the TV and heard what happened. I thought, Oh my God."

Her first task was to set up an emergency operations center—12 desktops, phones and network connections for the remote Red Cross workers who would be arriving, laptops in hand. She'd done the same thing last winter just before a forecasted blizzard that never came. Usually, establishing such an emergency operations center is triggered by the city setting up its equivalent. But Hunt

didn't wait for that. She knew the Greater New York staff would need the center immediately to plan shelters, staffing, supplies and logistics for the local relief effort.

That done, she pulled together a couple of staff members and volunteers to keep up her fragile LAN and WAN. She stayed at the front door and designated her help desk supervisor to handle the usual user issues.

For the next two weeks, each 16-hour workday was different. One day Hunt was dealing with a new set of users—rabbis, priests, mullahs and others sent by the national Red Cross to offer spiritual care to suffering New Yorkers. "All of a sudden, I had 75 people who needed access to computers and phones," Hunt says. Another day, relief workers from Red Cross headquarters in Washington, D.C., housed in an emergency operations center in Brooklyn, couldn't access their e-mail. Hunt had to set up new accounts for them pronto. At another point, Hunt's own Microsoft Exchange servers buckled from the increased load (new e-mail servers are near the top of Hunt's wish list). The Greater New York website (www.arc-gny.org) went down several times from the spike in traffic. Then on Sept. 12, the e-mail server got hit with a virus.

A Little Help From Her IT Friends

THERE ARE A LOT OF POWERFUL moments in these hours of blackness," Hunt says. "If you focus on those good things, they'll get bigger and bigger, and eventually the black will go away."

Shortly after the virus attack (Hunt caught it early and had the patch on hand), donations from the IT community started flooding in. Hardware. Software. Routers. Switches. Microsoft waived licensing fees for Hunt's extra end users during the disaster. Others helped where Hunt's own staff lacked time or expertise. Brian Ford, a Cisco consulting engineer, worked to bolster the organization's networks. AT&T Labs sent Principal Scientist Fred Tune to offer recom-

mendations for speeding up the network. Dell Computer Systems Consultant Jim Marrone was on call for hardware questions. Todd Curtis and Rory Wheelock, both infrastructure engineers from EDS, have made a home for themselves in Hunt's department. Cap Gemini Ernst & Young sent consultants to help with inventories of everything from socks to dog food to computer parts. Other volunteers included TheStreet.com's CTO David Willen, EMC Systems Engineer Christian Aguayo and members of Webgrrls New York City. "We got such a huge outpouring of help from the IT community, it was humbling," Hunt says.

Also in the silver-lining department: An upgrade to Hunt's LAN went from wish list to reality. Donations from suppliers have made it possible to work on plans for a permanent emergency operations center and a high-tech emergency response vehicle. Among other projects that could get a green light thanks to volunteer efforts and donations: setting up a data redundancy site, upgrading the e-mail server, improving WAN connections, setting up a storage area network to handle a surge of data and creating an electronic inventory system to track materials such as in-kind donations.

"We have made commitments to IT before this for certain initiatives, but first and foremost we serve our clients," says Adrienne Glasgow, CFO at the regional Red Cross. "Without these in-kind donations it would have been very difficult to get all of this done. We couldn't have dreamed of getting this kind of expertise in here. I would have looked at the price tag and said no."

A week and a half after the attack, Hunt finally took off her red jacket. "I had a minute, and I took that chance to take a look in my office. My desk looked like a bomb hit it. I had 700 and something-odd e-mails. I had 54 voice mail messages," Hunt recalls. She slipped into a fashionable lime-green blazer.

Not that everything—or anything—was back to normal; it's just that you have to begin somewhere, and this is where Leslie Hunt began.

—Stephanie Overby

Lower Costs, Happier Customers: *The* Knowledge Management Payoff

Knowledge management (KM) is one of those terms that, when not considered in the context of a specific application, tends to fuzz around the edges.

"KM is a discipline—not a technology—that can be applied to a specific business segment," says Kent Heyman, CEO of ServiceWare, an Oakmont, Pa.-based company that applies knowledge management to its customers' CRM (customer relationship management) solutions. "In ServiceWare's case, we have targeted customer service and support. KM allows an organization's intellectual assets to be used anytime, anywhere, for a specific purpose such as CRM."

"Five years ago you were grateful if someone answered the phone," Heyman says, commenting on the evolution of customer service and support. "Then, as interactive voice response systems (IVR) took hold, you found yourself lost in endless telephone trees, repeatedly entering your customer ID and explaining your problem every time you managed to reach an actual human. Today, things have changed. Now customers expect the rep to answer the phone on the first ring and immediately know their complete identity and purchasing history. CRM's task today is to provide customers with what they called for in the first place—a quick and efficient answer to a question or request for service."

Getting to the Answer

In order to ensure that customers get exactly what they need—an answer to their question—ServiceWare offers eService Suite™, a set of browser-based applications that allows an enterprise to leverage its accumulated

knowledge to provide superior service and support. At the heart of eService Suite is the patented self-learning, self-organizing and self-maintaining MindSync™ technology, based on neural networking.

eService Suite includes:

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"ServiceWare's intelligent service applications are a key component in our knowledge management solutions."

*Judith Cardinal,
Director of EDS E Solutions
CRM / Knowledge
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- open APIs for easy integration to escalation technologies, including e-mail, chat and Voice over IP
- ability to connect multiple knowledge servers to the same database for maximum scalability

Implementation Is Key

"When it comes to deploying a KM-based system, there is often some confusion about what a knowledge management system actually is and how long the implementation should take," says Scott Schwartzman, ServiceWare's vice president of professional services. "Many companies come to the table thinking that they have to embark on a large-scale, corpo-



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ratewide project just to get started, similar to the way they did with ERP [enterprise resource planning] systems in the past."

But companies may have more success starting out small, Schwartzman argues. "When you decide to deploy a KM-based intelligent service application, you can be highly selective," he says. "You can implement a modest system in a small, well-defined area for a specific business purpose—for example, a departmental customer service desk, or a self service Web site designed to answer specific, frequently asked questions. The implementation will not cost you a fortune and you'll experience a rapid ROI."

ROI, both in terms of money and user satisfaction, is the name of the game, says Schwartzman. Among ServiceWare's offerings are sophisticated ROI modeling tools that allow its customers to precisely calculate the anticipated payback from implementing a KM-based CRM initiative.

A KM-based CRM implementation typically takes between six weeks to three months, depending on project size and complexity, options purchased, workflow customization required and a variety of other factors. Because of the emphasis on ROI, the implementation is highly results-oriented.

Schwartzman points to Marconi PLC as an example of a specific solution that has had substantial payback. Marconi sells complex optical broadband switches. Its typical customer service representative is a highly trained engineer surrounded by an expensive infrastructure used to recreate the customer's problem. On average, the annual burden for handling typical level 1 telephone calls has been about \$200,000.

Working with ServiceWare, Marconi deployed an intelligent service application that has allowed them to displace 40 percent of incoming customer calls to a self-service call center. Savings are in the millions. In addition,

because answers are easily and readily available, customer satisfaction has increased as well.

Other ServiceWare successes include Northeast Utilities, New England's largest energy company. IT support center analysts responsible for helping 6,000 workers stay up and running report that as a result of implementing ServiceWare technology, the number of first-level calls resolved without costly

allowed the company to lower costs, reduce incoming calls and improve customer satisfaction.

Win-Win Situation

ServiceWare CEO Heyman adds that successful KM implementations always employ a proven methodology.

ServiceWare's eServices Success Implementation Methodology incorporates best practices from dozens of successful customer implementations. It ensures that companies will complete their KM initiatives within budget and on time and meet their ROI goals.

Heyman also notes that scalability should be built into the implementation process. "You may decide to rapidly launch a self-service site with FAQs to meet increased customer demand," he says. "Three months later you find that the site is meeting and even exceeding expectations. You decide to deploy the service to your agents and partners and add additional knowledge domains. Because your initial application was built to be flexible and extensible, you're able to scale the intelligent service infrastructure to meet the new requirements. "There are many compelling reasons to knowledge-enable your service and support operations," Heyman says. "Cost displacement—providing enhanced services for fewer dollars—is a key consideration in today's sluggish economy. But just as important is the enterprise's ability to gain a strategic advantage. Your customer service environment is your primary interface with your customers, partners or employees. Implementing a KM-based system allows you to build user satisfaction and long-term customer retention

for fewer dollars while staying ahead of the competition. It's a win-win situation."

For more information, visit www.serviceware.com or call 800-572-5748.

EDS and ServiceWare Partner for Success



ServiceWare has teamed up with a broad range of Solution Partners to implement its intelligent service applications. EDS, the leading global services company, headquartered in Plano, Texas, is one of ServiceWare's valued partners.

"ServiceWare's intelligent service applications are a key component in our knowledge management solutions which typically address CRM," says Judith Cardinal, Director of EDS E Solutions CRM / Knowledge Management group. "Although CRM is typically oriented to external customers, in a number of instances we have implemented KM practices for internal users—for example, back office touch points ranging from sales through fulfillment."

Cardinal says that the implementation process usually starts at the CXO level—primarily with the CIO and CFO. "We need to know their overall objectives for the system based on the enterprise's business plan. And we also want their wholehearted buy-in. Active participation on the part of top management goes a long way to ensure that the intelligent service applications deployment will be successful," she says.

EDS has developed a unique delivery methodology, known as Cohesion™. When partnering with ServiceWare, the EDS KM practitioners combine elements of Cohesion™ with ServiceWare's eServices Success Implementation methodology. "Having a rock-solid, proven methodology helps you overcome many of the problems you encounter when implementing a KM initiative," Cardinal says. "Probably the biggest hurdle is the client's corporate culture—often you're crossing divisional, functional and geographic boundaries or dealing with the results of mergers or acquisitions. For example, we recently worked with ServiceWare on an implementation for a financial services company. Due to several acquisitions, the corporate culture ranged from Wall Street pinstripes to Reeboks and jeans. Fortunately the CIO and the CFO took ownership of the project, sat in on meetings, and tackled major cultural issues head on. The project was highly successful.

"We usually do ROI studies right up front so our clients know what their payback will be," Cardinal says. "And, because the ServiceWare offerings are based on open standards, we can attach its products to legacy CRM applications without losing functionality. Our partnership with ServiceWare has become a major factor in our implementation of knowledge management solutions."

escalation has dramatically increased. In addition, 90 percent of the information needed by analysts can be found quickly and easily.

At Irvine, Calif.-based Sage Software, a ServiceWare KM-based self-service option has

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AVI DUVDEVANI

ACTING CIO, CITY OF NEW YORK

NEW YORK—Seventeen days after terrorists attacked New York City, Avi Duvdevani is still under siege.

"You can't get near the building," says New York City's acting commissioner of the Department of Information Technology and Telecommunications (DOITT) when asked if he's accepting visitors to his Brooklyn office. "I can't get FedEx packages delivered. Armed guards search my car every morning. *Every* morning."

And this is an improvement. For the first four days after the Sept. 11 disaster, Duvdevani wasn't driving to Brooklyn; he was waking up on an Army cot in his office after maybe two hours of sleep. He and the 40 staff members in charge of network operations did nothing but work to restore computing and telecommunications services to the dozens of city agencies that were directly and indirectly affected by the attack. Although numb, then grief-stricken, they were luckier than many. They had a job to occupy their hearts and minds—getting the city running again.

The project is ongoing, but the commissioner pauses to reflect on how the city's IT recovery plans were—and weren't—sufficient for a disaster of such unimaginable proportions.

Besides that, Mr. Duvdevani, how do you like your new job?

DUVDEVANI, A 20-YEAR VETERAN of the city's IT department, had just begun his fifth workday as its acting commissioner when he looked out the third-floor window of his office, saw the Brooklyn Bridge and saw black smoke rising from Lower Manhattan on an otherwise lovely late-summer morning.



"I thought it was a fire or something," recalls Duvdevani, 54. "So I turned on the TV set, and I was able to see the second plane hit. I realized right away it was terrorist activity. I did two things: I put on the emergency management radio channel so I could follow what was going on, and I ordered that the website be disabled because I thought we had stuff on the site that could be of aid to people doing damage, like online video streaming of traffic conditions. I assumed we were being invaded."

Up until that morning, the city of New York, under the reign of Mayor Rudolph Giuliani, was seen as overly ambitious if not utterly paranoid in its planning for the worst. On the 23rd floor of 7 World Trade Center, Giuliani had created the Emergency Operations Center designed to withstand bombs, hurricanes and nuclear assault. Across the river in Brooklyn, DOITT headquarters—which house some emergency resources along with critical mainframes such as those used for tax collection—were built to have redundant sources of water, electricity and telephone services. If destroyed, the data center could be completely replicated in Philadelphia within 24 hours, an expensive service

"The lesson learned here is that we had too much invested in the one central Verizon office."

—Avi Duvdevani

provided by a disaster recovery vendor and tested four times a year.

Fortunately, DOITT's Brooklyn fortress was not hit. In fact, of the department's 300 employees, only one was injured (in a traffic accident after the attack). But the Emergency Operations Center in the Trade Center was destroyed, and many city office buildings were damaged, including the city administration office at 75 Park Place where, just a week earlier, the previous DOITT commissioner had emptied his office.

Debris from the falling towers severely damaged Verizon's central office at 140 West St., next door to the collapsed 7 World Trade Center. The company provided telephone service for many of the 60 agencies supported by the DOITT, and its central office also housed the Internet connection for the city's website. At press time, Verizon was still working round-the-clock to restore services. The DOITT's reliance on that facility created much of the work for Duvdevani and his team in the coming weeks.

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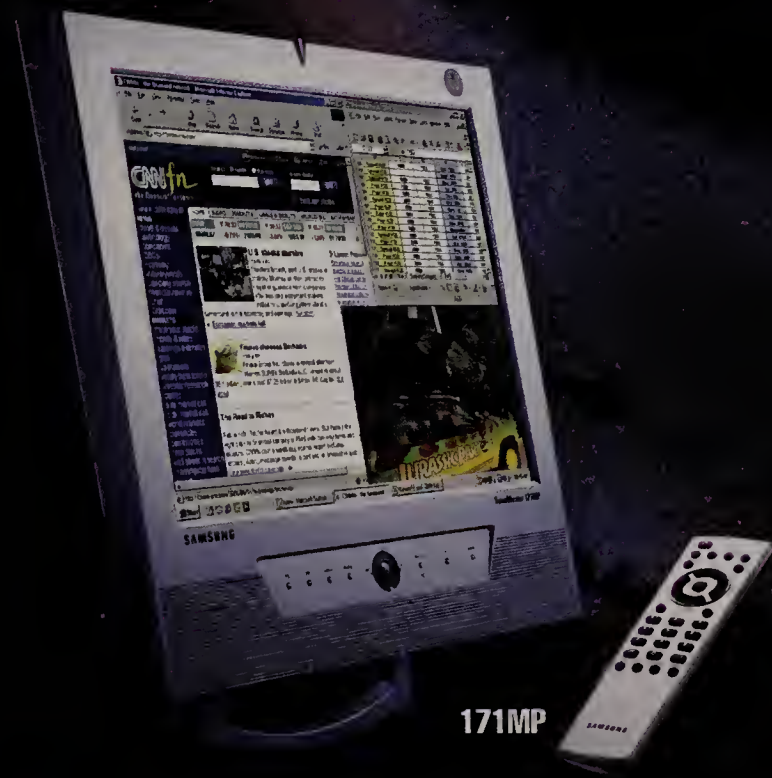
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Always Open

NEW YORK CITY'S WEBSITE (www.nyc.gov) promises citizens that it's "always open," and Duvdevani was determined to keep it that way. After the second plane hit, his staff removed parts of the site that could be useful to attackers and updated the front page to include information about the unfolding crisis.

The Web servers were safe in Brooklyn. The Internet connection, however, was located at the damaged Verizon office, and with electricity out in Lower Manhattan, Duvdevani knew the clock for the backup power supply was ticking. By 10:40 p.m., when the batteries gave out, NYC.gov had been migrated to a contingency Web connection. But that raised different technological issues. The backup connection had a different IP address, one that would take three days to fully propagate across name servers on the Internet. During that time, the site would be difficult to access.

That simply wouldn't fly. Switchboards were swamped with incoming phone calls, making connections difficult even for citizens who had dial tones. Many broadcast television stations had relied on antennas atop the fallen towers. NYC.gov was the best way to deliver information that just couldn't wait: where distraught families could go for help, where dislocated city employees should report to work, which schools were open, which trains were running, which bridges and tunnels were open, how citizens could help.

A half-dozen members of Duvdevani's team worked out a plan for physically rerouting the Internet connection. "That kind of thing would have taken weeks to design, and they worked it out in a few hours," he says. "We sent in four people in overalls and HEPA filter masks Tuesday night and Wednesday morning, and actually rebuilt the connection in another building."

By Wednesday NYC.gov was back to normal, except for a few sections kept down for business reasons—for example, online forms where citizens could send messages

to officials. "Between Tuesday noon and the following day, the mayor had gotten more than 1,000 messages, mostly of support and prayers," Duvdevani says. "If we'd have kept the [service] up, he would have gotten maybe 50,000 messages, and that's how many he gets in a year. His office couldn't possibly keep up." As the world knows, Giuliani had plenty to do.

Lessons Learned

LIKE THE ARMY COTS THAT DUVDEVANI and his lieutenants slept on for several nights after the attack, the recovery plan for restoring telecommunications was mostly a holdover from Y2K planning. Its name was MARC—Mutual Aid and Restoration Consortium. Each of the 30 telecom providers in the city is a member, including juggernauts like Verizon and smaller companies that install fiber-optic cable or provide terminating equipment.

Starting Wednesday, the consortium met once or twice a day, via a teleconference, to figure out how best to restore services across the city, juggling both public and private needs. "I would lay out the city's priorities and then ask which vendors could possibly support us in those locations," Duvdevani says. "Those decisions were mainly based on where those particular vendors had facilities. If somebody had fiber in the ground within 5 feet of the location, that was an optimum possibility."

The city Office of Emergency Management gave Duvdevani the list of which city buildings needed voice and data services restored first. What were the priorities? City Hall was first, of course, and was up by Friday, Sept. 14. Second in line was a large municipal building at 1 Center St., which houses among other things the citywide administration services, the department of finances, the controller's office and the public advocate.

At press time, DOITT has restored phone service to 25 buildings, with still more to go. Network connections will be next after voice lines. "It's become kind of a game of mak-

ing some balance judgments between doing something alternative and waiting for Verizon. The question is, Do you want to spend the money to do this, or do you want to wait, if it's not as critical as some other agencies are," Duvdevani says.

"The lesson learned here from a technical perspective is that we had too much invested in this one central [Verizon] office," he continues. "What we're doing now in terms of the restoration is really going to ameliorate that problem because, say, the municipal building has this alternate source for voice. We're probably going to leave that up forever. That doesn't mean we won't use Verizon—whenever they come back up—but now we have a backup. Maybe that's the silver lining in this whole thing, if there can be one."

It will be a long time before things are back to normal, whatever normal looks like. For now, Duvdevani's team has a daily reminder of the destruction: The 200 employees normally housed at DOITT headquarters have squeezed in an extra 80 IT workers normally stationed at the offices for administrative staff, human resources, and accounts payable and receivable in Manhattan. Like many city employees, their buildings—although still standing—are located in the area of Lower Manhattan that was still off-limits at press time.

"People are sharing cubicles. The bathroom is a mess," Duvdevani says.

As for the IT team, the work has brought the close-knit group even closer together. "It took a few days for the whole thing to sink in. Because we focus so much on the technology issues, we look at everything through a technology lens," Duvdevani says. "People were frustrated they couldn't help dig through the rubble, so they were very willing to do what they knew how to do. It's a way to transfer the helplessness into something productive."

—Sarah D. Scalet

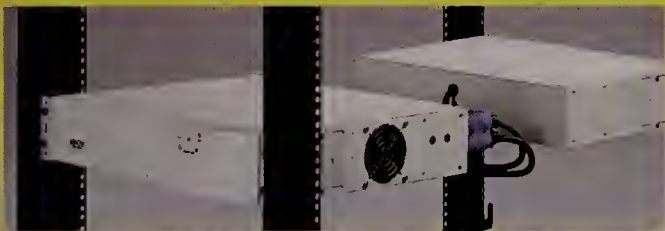
Sarah D. Scalet, senior writer and security editor, lives in Brooklyn, N.Y. She can be reached at sscalet@cio.com. Contact Senior Writer Stephanie Overby at soverby@cio.com.

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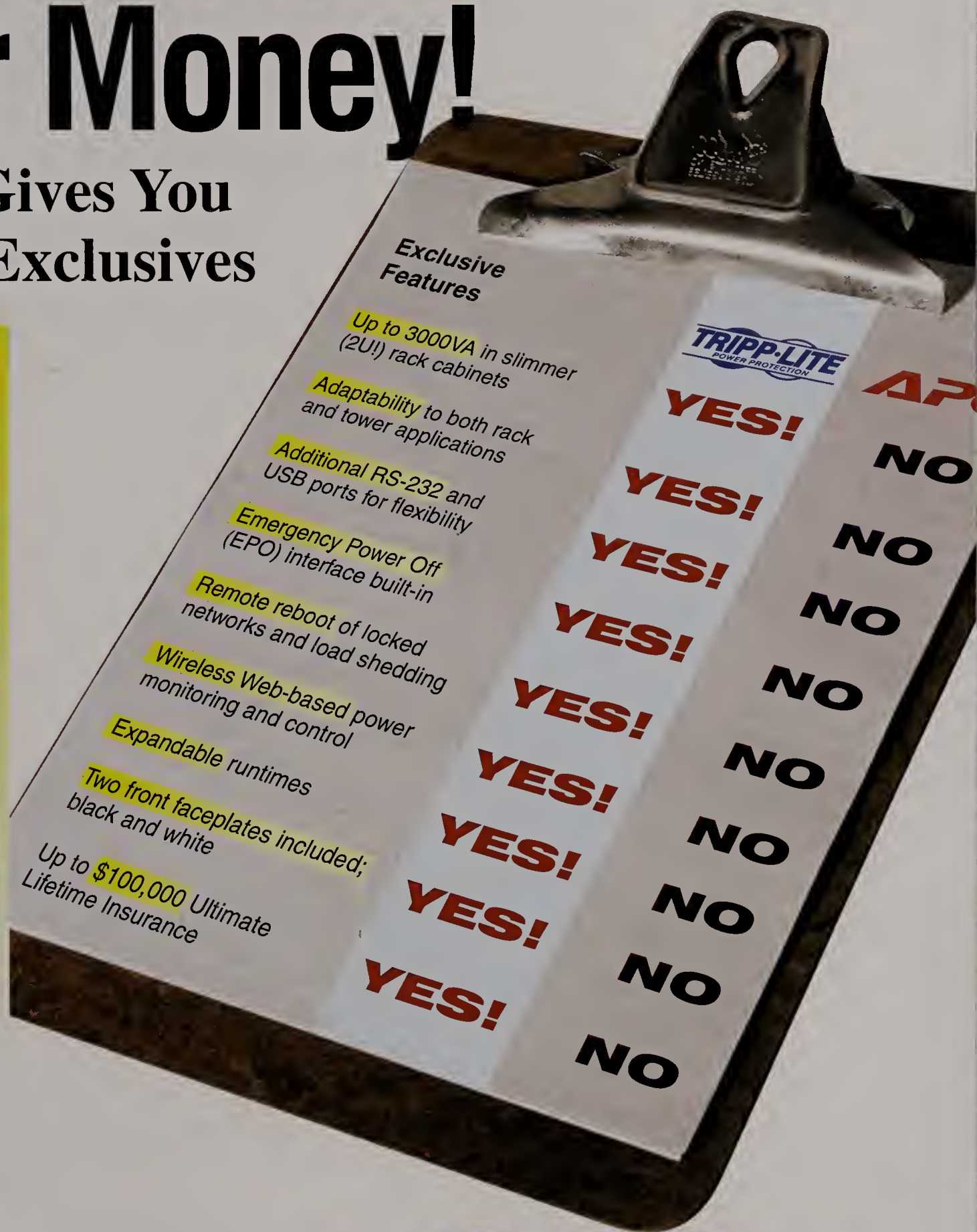
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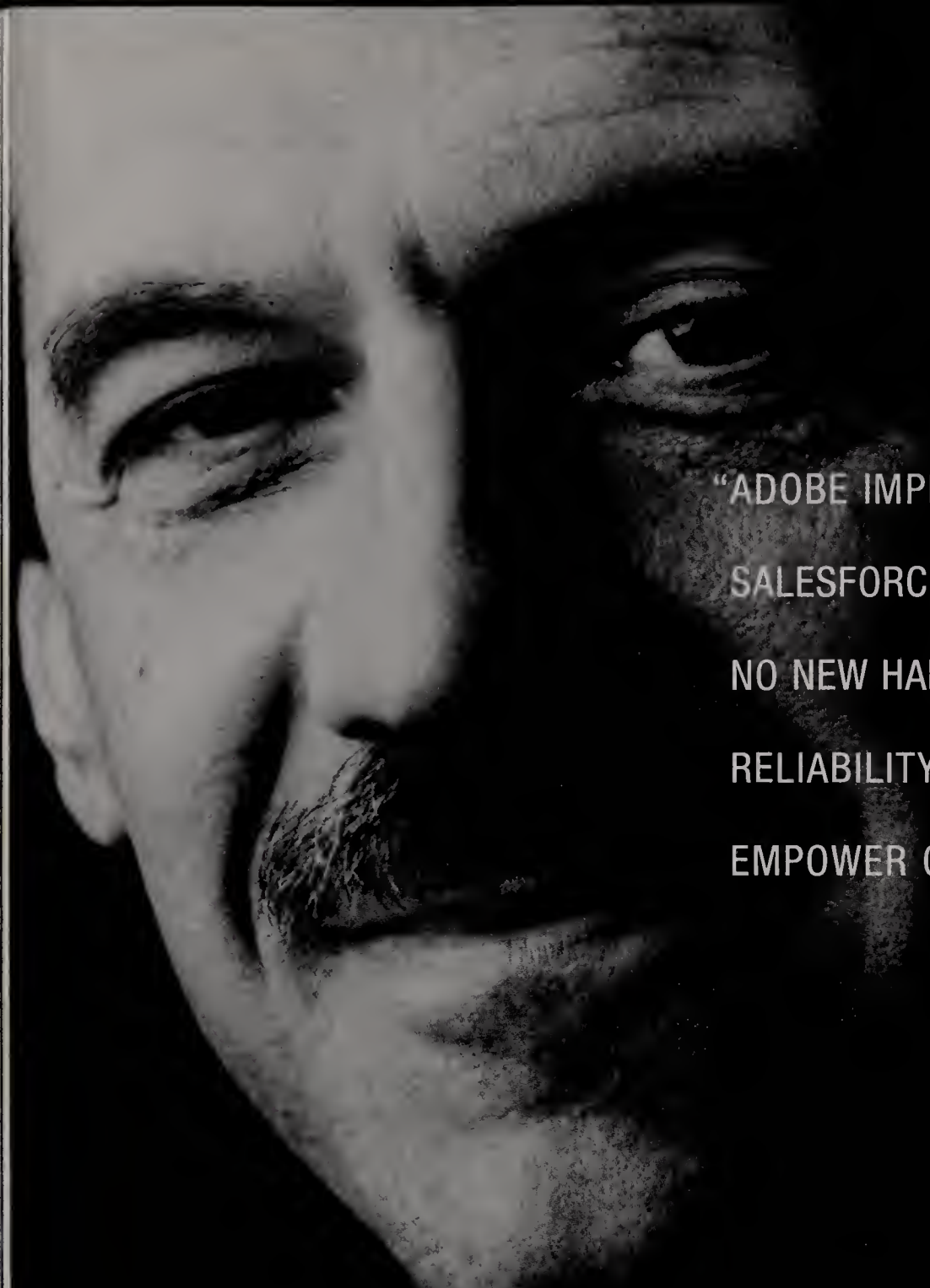


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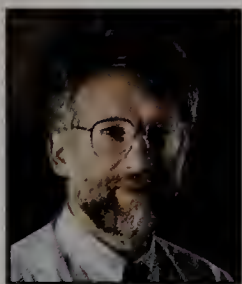
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WHERE DO WE GO FROM HERE?

It has become a cliché:

The Sept. 11 terrorist attacks on New York City and Washington, D.C., changed everything. But “everything” covers a lot of ground. What, specifically, has changed, and how does it affect the way we do business? Even more specifically, how does this new world look from the CIO’s seat? We asked six experts what CIOs should expect and do in critical areas including security, supply chain and staff management in this putatively altered world.



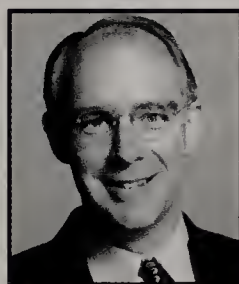
DAVID DOBRIN
President of B2B
Analysts, and CIO
columnist of
WorldView



JOHN MCCARTHY
Senior manager in
information risk-
management
practice, KPMG



YOSEF SHEFFI
Head of the center
for transport stud-
ies at MIT



JOSEPH BADARACCO
Harvard Business
School professor,
leadership and
ethics



DAVID FOOTE
Cofounder and
managing partner,
Foote Partners



BRUCE SCHNEIER
Founder and CTO,
Counterpane
Internet Security

GLOBAL BUSINESS

Importance of IT Just Went Up

DAVID DOBRIN

President, B2B Analysts, Cambridge, Mass., and CIO WorldView columnist



Before Sept. 11, many people thought we'd have a mild recession. No one believes that anymore. In certain industries—like electronics—people just aren't buying *anything*.

CIOs need to provide timely, accurate reports on volatile business situations and do so with limited resources. For global and multinational businesses, this can be complicated. Many such companies have B2B systems with suppliers and partners. But what happens when things break down? For example, transportation across borders is no longer as reliable as it was before Sept. 11. Companies are very high velocity these days. Even having two weeks of demand disappear creates all sorts of surprises. For example, your company may have to build up inventory, but that's pricey. What if you run out of warehouse space? The integrated supply chains companies have built can tolerate only so many variables.

Companies will have to redesign their supply chains. There will be less belief in the highly integrated, low-lead-time, low-inventory supply chain stitched together with IT. CIOs need to provide the business with the capability to be more responsive, to get advanced warnings from customers, to look at point-of-sale data from retailers and feed that back to manufacturing. In a recessionary environment, IT can make a huge difference because it can give companies early warnings about changing business situations.

Another big change will be in how business gets done. It's absolutely clear that people aren't traveling, but multinationals still have to communicate. There's a demand on IT to use the Internet and telecommunications to accomplish what travel enabled before.

Suddenly there's this huge demand for technologies such as teleconferencing and videoconferencing that previously few CIOs thought to be important. And it's not just a question of installing technology. In virtual meetings, many participants don't pay full attention. They are answering e-mail or surfing the Internet. With such technology-facilitated meetings replacing personal communications, these contacts should be shorter and occur more frequently. Virtual meetings should also be supported by documents; action items written down at one meeting should be part of the agenda at the next meeting. Essentially, meetings have to be approached with a different discipline, and that will take time to learn.

Intercompany communication on a global scale also has challenges. There are cultural issues as well as practical ones like time-zone differences. Using technology to communicate instead of face-to-face contact has implications for network support, usage policies and firewalls. The good news: For multinationals, connection to the Internet isn't much of an issue, nor is reliability. The Internet was designed for a nuclear attack.

The cost of business travel will now be spent on technology. CIOs will now be responsible for a large redeployment of resources. As communication technologies replace travel, the technology itself becomes more important, which means that managing the technology is more important.

RISK MANAGEMENT

Plan for People, Not Just Systems

JOHN MCCARTHY

Senior manager in information risk-management practice, KPMG, Washington, D.C.



One of the great lessons of this tragedy, and others in the last decade, has been helping company leaders see the people in their organization as part of the risk-management equation. Most companies have a business plan for technology failure—things like someone putting bad soft-

ware on the system or dealing with a security or hacker threat. Now what we're seeing post-Sept. 11 is the recognition by leadership that there's an even greater need to understand people processes in the context of risk management and disaster recovery.

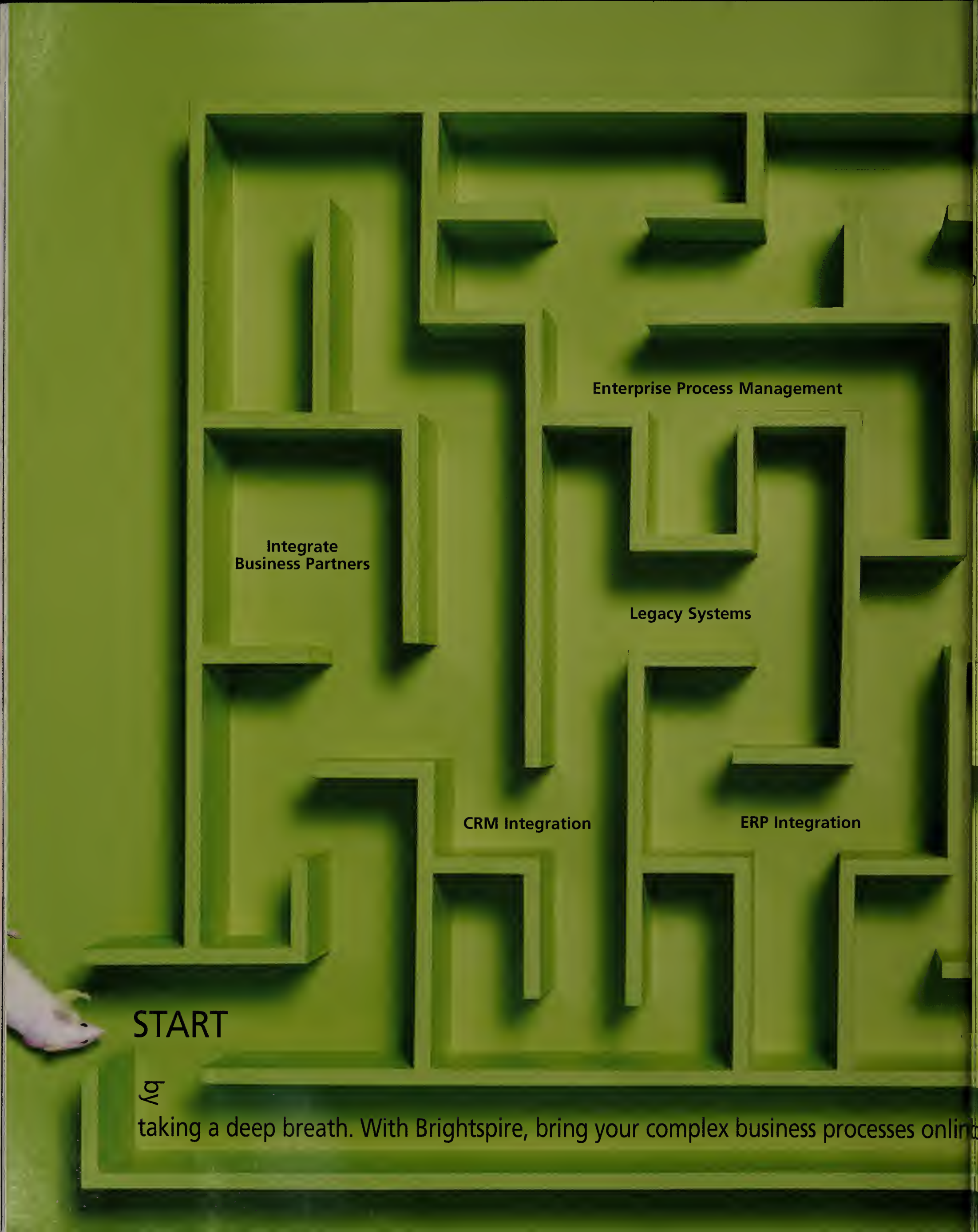
Companies need to think about how they will take care of their employees, account for the missing and deal with the families in the event of a fire, a flood or an explosion in the building. How will you take the services and processes handled by those people and transfer that responsibility to another part of the organization so the business can continue dealing with a disaster? You can't let a major disaster stop the entire organization from doing anything else—you have to look at how you can separate the tragedy from the necessity to keep delivering services. You have to know what the critical functions are and how to continue them in the face of disaster. How will you communicate internally and externally? You must figure out how you will talk to industry peers and associations, and how you will deal with state, local and federal authorities.

Also, think about how you will communicate with customers. How will you talk to them about the status of your business and your employees, particularly if the business—say, a financial institution—has a piece of the customer's money?

A big lesson for CIOs and other leadership is that continuity management is not a line function. It's a core function that must be managed from the top of the organization. CIOs are familiar with this, as they have long argued that technology also cuts across the business and needs attention from the executive team. After Sept. 11, CIOs will have a lot more credibility when making arguments for replicating critical systems. The case has been made graphically for CEOs that the kind of discussion that has gone on at the CIO and CFO level in terms of risk management aren't way out there—they need to be addressed ahead of time. The watchword coming out of this is going to be enterprise risk management—no more point solutions. *Continued on Page 84*



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Continued from Page 78 If you want to survive something this extreme, an enterprise approach is what will make the difference between making the business go or not.

SUPPLY CHAIN

Build Safety Stock, Then Forget You Have It

YOSEF SHEFFI

Head of the center for transport studies, MIT, Cambridge, Mass.



I think security is a long-term issue, and it may lead to some of the following mitigation strategies. One is deciding which parts are crucial for your production line and which parts can withstand a longer lead time. Usually these decisions are based on how well you can forecast demand for these items and how good the forecast is. For hard-to-forecast items, companies may want to start building some safety stock, but for the bread-and-butter items that are replenished day in and day out there will not be a big impact. Original equipment manufacturers are not going to increase their safety stock for items across the board—just the ones that are hard to forecast.

The other strategy is to have good suppliers. For example, the majority of your stock may come from overseas at low cost, but now you will have a secondary local supplier to whom you have to give some business right now. You can't just keep them on standby. People always knew that you had to have more than one supplier, but it was OK to have one supplier in Taiwan and one supplier in Singapore because while one might have political or labor problems you always had the other. Now, introducing security into the equation, I may want one abroad and one in America.

Just-in-time manufacturing is here to stay. Smart companies may build some safety stock, but it will be independent of just-in-time. They will not give in to the temptation of using the safety stock, because there are lots of other benefits of just-in-time besides low inventory—specifically high quality and

quick diagnosis of supply chain problems. With just-in-time you don't have inventory to cover up your problems. Now you will have to *act* as if you don't have inventory even though you do.

Inventory is a security blanket—it allows you to cover up your problems. The key to running just-in-time is to cover yourself from supply chain disruptions with some inventory or a local supplier. It will be a mistake to move to just-in-case.

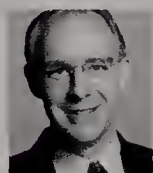
The decision of when to use your safety stock depends upon the fundamental difference between something you control and something you do not. For example, if you have a disruption because terrorists attack the World Trade Center and the border is closed, there is nothing you can do to fix it. *Then* you use your safety stock. However, if your supplier starts shipping defective material, stop the line and fix the problem immediately as if you don't have the extra inventory. With safety stock, the temptation is to say, "We have inventory, don't worry about it." But that's exactly when you need to address the problem.

LEADERSHIP

Balance Change with Routine

JOSEPH BADARACCO

Harvard Business School professor focusing on leadership and ethics, Cambridge, Mass.



The first thing for managers to consider is the importance of preparation. It's true that preparation for Y2K helped many CIOs on Sept. 11 because they had redundant systems.

So contingency planning is important. But the kind of contingency planning most people do is "best case plus 20 percent," "worst case minus 20 percent." Sept. 11 presents us with a much more dramatic situation.

But there's only so much you can do. There will always be things you can't foresee. What you *can* do as a manager is keep all lines of communication open so you can communicate quickly when something

unexpected happens, even something drastic. You've got to be ready to scramble—and not just as an individual but as a team. The team will always be more resourceful than a single person. Scrambling means learning about what's happened quickly and formulating a response.

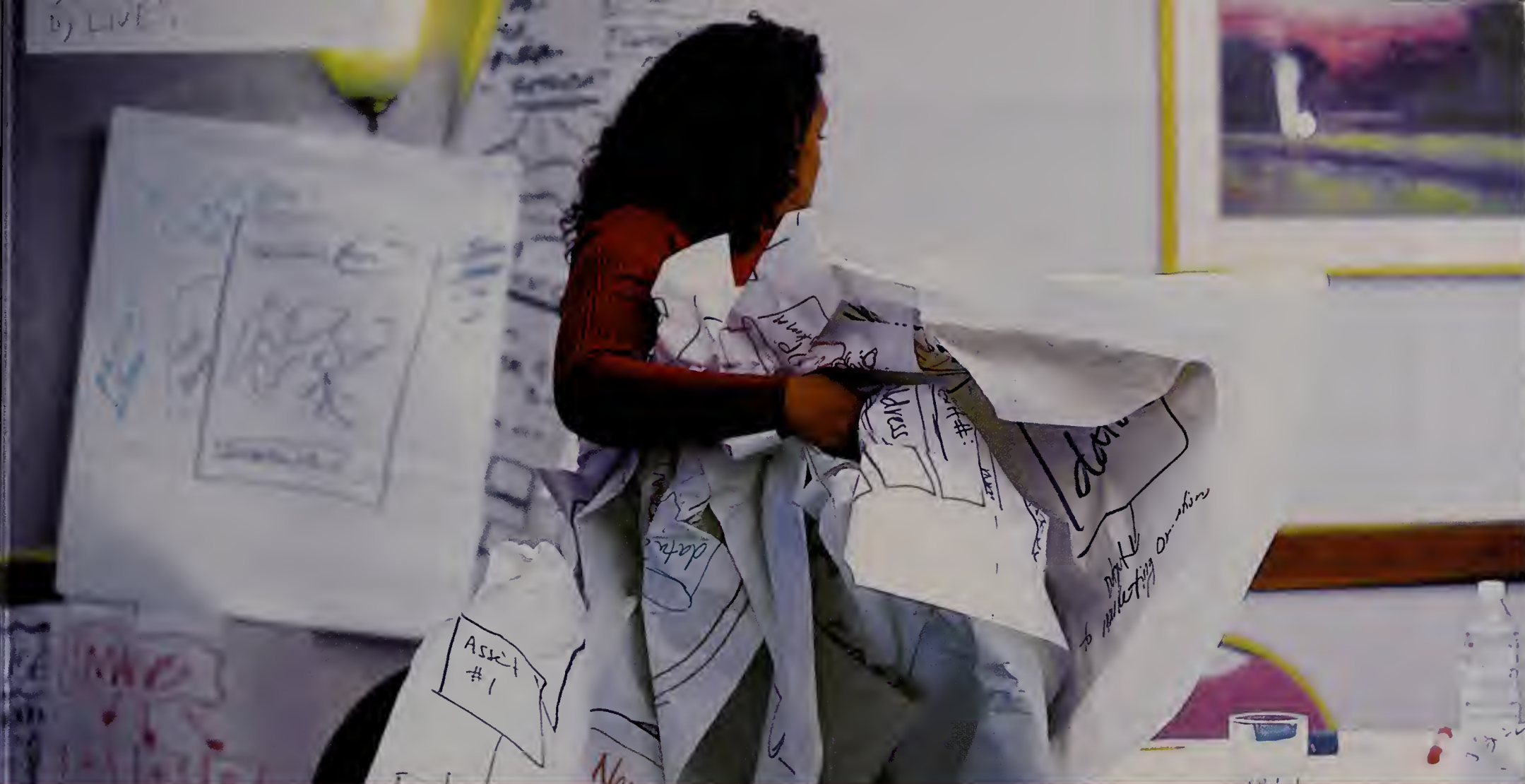
Another thing to consider is that it's going to be very hard for people to differentiate between long-term and short-term changes after the Sept. 11 attacks. One scenario is that we really stamp down terrorism. Another comparably probable scenario is that there are more attacks, and we move into an Israel-like state, with permanent insecurity. Those are radically different worlds. It's going to be hard to know for a while how things will turn out.

That said, people have a strong need for routines. Their old routines will assert themselves. From time to time, people will be pulled back, reminded. Maybe when they go into a tall building, for instance. This catastrophe reached people at a very deep level.

For the next couple of months, managers need to do two things—and these things are a bit contradictory. The first is to get back to work, because things need to be done and because people need routines. At the same time, managers have to find a way to give people space and let them work through this. You have to be sensitive to the way people are feeling. People respond to crises differently and at different speeds.

If flying is an inescapable part of someone's job and they refuse to fly, at some point you're going to have to find somebody else to do the job. At some point, the work has to go on. But somebody who says, "I can't deal with flying now" might be willing to fly in a month.

Try to think creatively about other ways to get business done. My sense is that people relied on airplanes vastly more than they needed to. The cost and inconvenience of flying is very high. We're getting streaming video from Afghanistan right now; I don't understand why everyone's got to fly to Des Moines.



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Lead Them Through the Transition

DAVID FOOTE

Cofounder and managing partner,
Foote Partners, New Canaan, Conn.



When I talk with executives, one of the first references I use is Charles Darwin, who said, "It is not the strongest of the species that survive, nor the most intelligent, but the one most responsive to change." That's true for companies and for our country as a whole right now. We're certainly strong, but can we make a transition?

Change is the easy part; changes are situational, external. Transition is the response to change. Transitions are psychological, internal, focused on an ending. People don't like endings.

A transition is the end of something but also the beginning of something. But the in-between is scary. Employees are focusing on what we're losing—that's happening big time right now. They know that life is not going to be the same, but they don't know what that's going to be like. It's a transition to an unknown.

What you have to do for employees is create temporary systems to get through it. First off, you've got to get people talking about this. Bring in a psychologist or therapist. You have to acknowledge losses openly and sympathetically.

You need to strengthen connections [between employees]. It's interesting how people are using intranets to get through this. People are on the road or working from home; the workforce isn't all together in many organizations. What has happened is they've been taking these bland corporate intranets and turning them into boards where employees can talk to each other. They post what they're feeling where others can see it and respond. It's a great example of a temporary system.

You want to help people define the transition. You do this by defining what's over and what's not. Not everything is over. Right

now a lot of conventions and events are being canceled. Some travel is curtailed, some projects are canceled—but a lot of things are just being pushed out. You know, a lot of people measure their careers by their projects. Tell them, "We haven't canceled that project."

Layoffs are still on people's minds. That was happening before Sept. 11. Now, even people who aren't being laid off are saying, "Maybe I should circulate my résumé." Tell them, "There will be no layoffs; we're not canceling projects." Or, "Here's who's being laid off: them, but not you." Or, "We're canceling one thing but nothing else." Don't lose people over this.

Executives need to change the metaphors to lead employees into the next phase. Leading by metaphor is about redefining things. Look at our president: He's leading by wrapping everything around the flag—and people are eating it up! Executives need to talk about what their companies stand for instead of just what they do.

This is where real leadership comes in. A lot of executives who are dealing with this really aren't leaders—they're managers. The companies with strong leaders are the ones that were talking with employees and customers right away.

SECURITY

The World Hasn't Changed. We Have.

BRUCE SCHNEIER

Author of *Secrets & Lies: Digital Security in a Networked World*, founder and CTO, Counterpane Internet Security, Cupertino, Calif.



People think everything has changed. Is air travel more dangerous than it was a month ago? No. Are there more terrorists? Actually, there are fewer terrorists. Is the world more dangerous? No. Is jet fuel somehow more lethal? No. America is very much a bright-shiny-object sort of culture. We'll talk about whatever the bright shiny object is, and if the bright shiny object changes next month we'll talk about that.

Right now, security is important. But will anything change? Who knows? Ask me in six months.

Wake-up calls are a dime a dozen. Why wasn't the Code Red worm a wake-up call? Why weren't the denial-of-service attacks on sites like Yahoo and eBay in February 2000 a wake-up call?

So here we are. We've got the largest loss of life in our country, and now *this* is a wake-up call. Is it really? You've got to hope so. We need something that will convince people that security is important. This might be it.

If, indeed, this physical attack changed people's perception of electronic security, then this talk about an electronic Pearl Harbor, a massive, high-profile cybersecurity breach, was wrong. It took a real-world attack to convince companies that there was a cyber risk. I would not have expected that. The question is, Is it permanent or just the thing I'm worried about *today*? I'd like to think it's permanent, because the threats are real.

Cyberterrorism is something that can be done. It takes a lot of expertise, but you can be safely at home in your own country and launch your attacks. You don't need a lot of logistical support. You do need expertise that your average terrorist doesn't have, even a terrorist who can fly an airplane.

I have a feeling cyberterrorism is going to happen, just like we see cyberorganized crime. You go where the money is; you go where the bang for your buck is. And as more of our critical systems go online, that'll be where terrorists launch their attacks. The Internet is really a target-rich environment, but most of the targets hackers select are dorky targets. So you knock down a CNN webpage, big deal. If you could knock down the power grid.... But flying planes into buildings is a completely different league. If you're willing to do that, cyberterrorism is kid's stuff. **CIO**

Send comments about this piece to letters@cio.com. CIO staffers Simone Kaplan, Susannah Patton, Edward Prewitt, Megan Santosus, Sarah D. Scalet and Ben Worthen interviewed the experts.



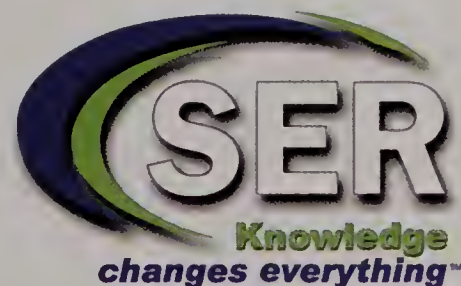
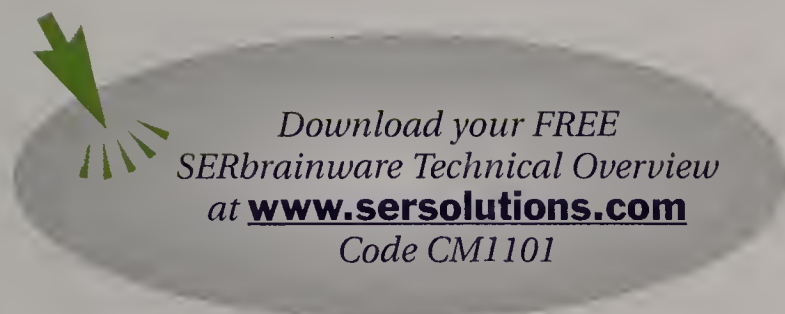
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IT Takes

These days, it's hard for one person to fill the CIO's shoes. Some organizations are finding that an operations-focused deputy CIO is just the ticket.

BY POLLY SCHNEIDER TRAYLOR

on Harris was about to *politely* say good-bye

and hang up the phone after a hiring official from the city of Austin, Texas, informed him that the CIO job he'd been interviewing for had been filled. What the official asked next threw him for a loop: Would he come on board as deputy CIO instead? The senior IT veteran was taken aback. I'm not used to being number two, he thought. But when he learned that the new CIO was an old colleague—whom, ironically, had reported to Harris 16 years earlier—he reconsidered.

Fourteen months later, Harris and CIO Brownlee Bowmer work hand in glove, running the IT operations and strategy for Austin's sprawling high-tech community. Bowmer spends his days navigating the politics of city government to line up support

for his e-government initiative and other enterprisewide initiatives, while Harris serves as chief of operations, rallying an IT group of 200, leading major projects, and orchestrating everything from budgets and hiring to upgrades of the city's fiber-optic network. Winding down from a 35-year career in IT, Harris is no longer sore about losing the CIO job. In fact, he enjoys working (and occasionally socializing) with Bowmer so much, he wouldn't have it any other way. He and Bowmer spend at least two hours a day working through decisions and problems together. "It sounds like we're in love with each other," Harris jokes, "but we're not."

Harris and Bowmer arrived at their respective roles by accident: City officials

Reader ROI

- ▶ Learn the pros and cons of having a deputy CIO
- ▶ Understand why this organizational model is an emerging trend
- ▶ Gauge whether a deputy CIO would be good for your company

PHOTO BY JAMES MCGOON

TWO



In Austin, Texas, CIO Brownlee Bowmer (left) and Deputy CIO Jon Harris use complementary personalities and work styles to push through difficult projects more quickly.

decided that two CIOs with complementary skills are better than one. But some CIOs are intentionally creating operations-centered deputy CIO positions because they desperately need a senior executive who can run the shop and fight fires so that they can focus on business strategy. These CIOs—or their bosses—realize that the expanding scope of the CIO role is often too big for one person; running a tight IT outfit and leading corporate IT strategy at the same time is exceedingly difficult.

The stretched-too-thin syndrome is an outcome of IT's growth in importance to companies. CIOs long ago moved out of back offices and into executive suites—yet even as they are charged with showing the way toward new, business-critical uses of technology, they nonetheless remain responsible for the day-to-day functioning of internal and external networks, enterprise systems and all those desktop com-

puters. The sheer logistics of the CIO job are overwhelming, for one thing. "CIOs die on the vine of meeting management," says Patrick Jordan, an assistant director in Austin's IS department who works with both Bowmer and Harris.

Clashes over who had authority to do what were finally resolved when Austin CIO Brownlee Bowmer told his deputy, Jon Harris, "There is only one CIO, and that's not going to change."

It's also rare to find what PricewaterhouseCoopers Consultant Chris Gardner calls double majors—IT executives who can effectively wear both a strategy hat and a technical or operational hat. Those who appear to shine in both areas are often snatched up by consultancies or vendors dangling sky-high compensation packages, says Gardner, a partner and New York group leader for PricewaterhouseCoopers' management consulting IT strategy practice. Most CIOs instead succumb to fire fighting and crisis management, their best-laid plans for prioritization shelved by events, says Jerry Gregoire, former CIO and senior vice president of Dell Computer. "Every year they all say they plan to spend 75 percent of their time on strategy and 25 percent on operations, and then they up having to do it the other way around."

A deputy CIO can overcome this planning predicament. An operationally focused number two complements the strategy-centered CIO—much like a corporate COO does the CEO—and typically oversees technology execution and maintenance, personnel and the budget. The presence of an operational chief has allowed Alan Hughes, president of business services and CIO of Deutsche Financial Services in St. Louis, to make speedy progress on organizationwide priorities. Earlier this year, he developed a new architecture framework in a matter of months—a plan he believes will provide flexibility and cost savings for the company. Meanwhile Hughes's number two, CTO Dennis Halloran, kept the trains running on time.

Although seconds-in-command are still unusual in IS groups, the CIOs who have created number-two positions—termed deputy CIO, CTO or other title—report that they have more time to do what they love: craft big ideas and work with customers, flex their leadership muscles, and hone relationships with senior management. But there is a price to pay for this luxury: namely, dividing responsibilities and managing the ensuing internal politics and confusion. Not to mention that the

Deutsche Financial Services CIO Alan Hughes (left) delegates daily management responsibilities to CTO Dennis Halloran.

PHOTO BY STEPHEN KENNEDY



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CIO, not the number two, remains accountable for the technology breakdowns and blowups.

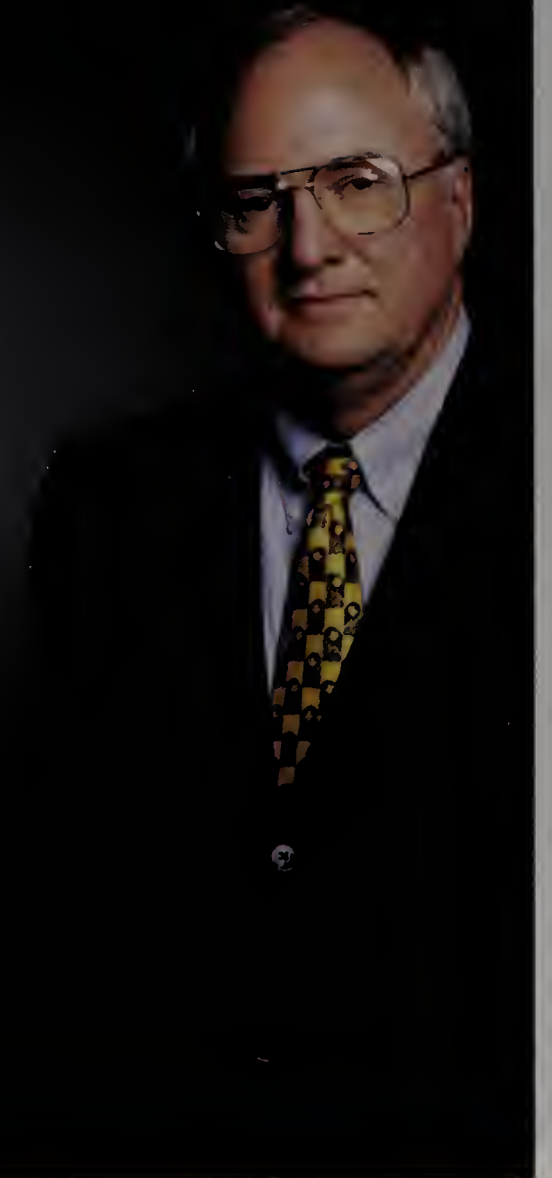
Look for a Pal

You don't need to agree on everything, but you and your deputy are going to spend many hours together. So you'd better have above-average chemistry. For this reason, CIOs often promote a well-liked manager who has broad experience in technology and operations from within. If they must look outside, they choose someone they know and trust.

It's also a good idea to select a partner who excels at and enjoys doing things you don't. "I like change management, not the routine stuff," says Bob Ridout, CIO and vice president of IS at DuPont in Wilmington, Del. While he is tied up in meetings with the CEO and external business partners, his number two, Director of IS Diane Strickler, works with DuPont's five regional CIOs on process improvement and manages the company's global outsourcing alliance (Accenture and CSC are the other partners).

After Ridout succeeded the company's former vice president and CIO, Cinda Hallman, in April, he found that his external role in the company was too much to handle along with managing a global workforce of 1,100. Ridout says Strickler is "the first among equals." He elevated her because he knew she would work well with the staff; she was a known entity, having temporarily taken over Ridout's job once before in 1999 when he was busy with a post-Y2K strategic planning committee. The two DuPont "lifers" have worked together in varying capacities at the chemical giant since 1983, and they talk like a married couple. "There's always a reason for what Bob [Ridout] chooses to do," Strickler says. She knows, for instance, how he will select a team or tackle a problem. Where Ridout tends to move fast and "take the hill," Strickler likes to solve problems more methodically, step-by-step. What makes their relationship work is shared values about what's right for

While CIO Bob Ridout focuses on the needs of DuPont's CEO and board, Director of IS Diane Strickler works with the company's five regional CIOs.



"My focus on e-business began to identify cost savings and revenue opportunities that more than offset the additional costs associated with the promotion of CTO Dennis Halloran."

—ALAN HUGHES, CIO,
DEUTSCHE FINANCIAL SERVICES

DuPont. Both firmly believe in giving the IS department a strong business orientation, for instance. "If someone makes judgments like you, you don't hesitate to delegate to that person," she says. Confirms Ridout: "I am very comfortable with having Diane

speaking for me at meetings."

In some organizations, the yin-yang relationship is even more pronounced. Austin's Deputy CIO Harris says, "Coworkers would describe Brownlee [Bowmer] as pensive and introverted. I am more animated, yelling and screaming, somewhat of a clown." Yet Bowmer is the visionary who strokes egos and makes big ideas happen—specifically, the future of government services delivery. His calm, deliberate style serves him well in an environment where routine decisions such as vendor selection entail excruciating approval channels. Harris, on the other hand, is gregarious and good with people, often bringing a sense of humor to bear, and at times is hot-tempered, according to Bowmer. This opposite orientation enables the executives to win difficult battles more quickly. Earlier this year, for example, the duo established a database standard for the city's systems in just six

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months—no small accomplishment given the often fractured nature of technology in government.

Divide the Sandbox

Having good chemistry is one thing. Slicing one job into two is quite another. If a CIO is unwilling to delegate some degree of decision making, the person he wants is an administrator rather than a deputy. Yet even for CIOs ready and willing to relinquish authority, defining the boundaries between the top job and the second in command isn't always easy. When Deutsche Financial's Hughes promoted Halloran from head of IT operations to CTO in January, he knew that handing over the bulk of daily management responsibilities would not be easy. Several months into the transition, Hughes was still deeply involved in a high-level project—which irritated Halloran. "He probably would have preferred a quicker handoff, but I didn't want

to let go of everything at first," says Hughes, whose job now encompasses both IT strategy and internal operations.

Halloran admits that he too sometimes crosses the line. "Occasionally, I have a flash or vision that I'd like him to look at—and he might not," he says. Other forms of toe-stepping remain. One is Hughes' long habit of "walking the floor," his way of checking in with key staffers on various projects. From Halloran's perspective, this practice of his CIO confuses the staff about who is in charge. "You have a choice of letting yourself get drawn in or not," Halloran says. "He tends to get drawn in." For the most part, the two have worked through their differences; if one makes a decision that was in the other's domain, they confer and go back to the staff together to clear things up.

Bowmer and Harris faced similar territorial conflicts early in their relationship in Austin. Initially, Harris viewed himself more as a co-CIO than a deputy. The resulting

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clashes over who had authority to do what were finally resolved when Bowmer told Harris, "There is only one CIO, and that's not going to change."

The process of defining who does what needs to be a daily affair, PricewaterhouseCoopers' Gardner says. CIOs and their number twos can also butt heads over decision making—if one focuses on technological factors, for instance, while the other tends to look primarily at human behavior. "The bottom line in sharing power is to create a situation where you have close collaborators," says Gardner. Devising a common business purpose and economic incentives for people to work together are two ways organizations can foster collaboration, he advises.

Sharing power effectively is also knowing when to act as a united front, especially when it comes to credit and blame. Finger-pointing doesn't fly; good partners try to protect each other. "Jon [Harris] usually beats himself up bad enough for both of us," says Bowmer. "We accept each other's human frailties and move on."

IS Architecture

Which organizational models would work best for you?

Culture, personalities and lines of business play a large part in deciding which organizational model the IS group follows. Establishing an operational deputy CIO position is one option. The following are three other common organizational models that CIOs use.

Office of the CIO: A corporate CIO with three to four senior vice presidents on equal footing. Suitable for organizations that are small or narrowly focused in the scope and complexity of the business so that the CIO can effectively handle both strategy and operations. Also good for organizations where politics and culture require a central CIO position to avoid alienating senior staff members or business executives. Appropriate when the CIO has the skills to wear both the operational and business strategy hat.

Federated model: A corporate CIO with divisional CIOs in each business unit. Typically, divisional CIOs report to the general manager of their respective business units with a dotted-line relationship to the CIO. Could be combined with the operational CIO deputy model (DuPont is an example of this blend). Most prevalent in large, multinational, decentralized organizations.

Co-CIOs: Sometimes seen in merger situations combining two distinct businesses and IT organizations. Can be extremely confrontational, especially if CIOs have equal stature, experience and power.

—P.S.T.

Play Nice with Staff

You and your operational CIO are the perfect team. If only the staff could see it that way. When Ridout gave the reins to Strickler at DuPont, a few of his direct reports were upset when they learned they would be reporting to her instead. Fortunately, Ridout's inclusive style of leadership helps ameliorate such conflicts. "There are plenty of other people who have one-on-one relationships with Bob [Ridout]," Strickler says.

Then there's the barb of succession politics. The operational CIO may appear a threat to other talented managers in the organization who are vying for the top job.



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In reality, CIOs usually have several senior staffers who are candidates, and the operational chief may not have the right personality or skill set to succeed the CIO anyway. Tom Mangan, a former CIO and head of Andersen's CIO Advisory Service National Practice, explains the conundrum: "CIOs rarely identify a number two in the department to their people because they like the competition. But the business side absolutely wants to know who the number two is." The CEO and other executives want to know who's ready to step in and run the critical IT systems if the CIO leaves, Mangan says.

Companies such as DuPont, which has structured succession and career development programs, may have an easier time. Promising managers in the company are tapped and trained for senior positions early in their careers, and lines of succession are more transparent. Strickler's job was set up as a direct hit for the CIO spot—even though Strickler, 58, says she will likely retire before that day comes. If Ridout had to replace Strickler today, he would look for someone with her strong internal and external leadership skills and solid business judgment who is adept at working with senior business executives in several regions. Ridout is confident of finding that A+ résumé within DuPont: "We have a lot of those types here."

Another political issue inherent to having a deputy CIO is the need to educate business leaders about the changing CIO role. Nine months into their new jobs, Hughes and Halloran still receive calls meant for the other. In Austin, city managers prefer working with Bowmer, since he's higher up the hierarchy, which makes Harris's job difficult if he can't get access to department heads during a project. To give Harris more exposure, Bowmer brings Harris to strategy meetings whenever possible.

CIOs may also struggle with justifying their paychecks once they give up their operational duties, which have more distinct performance metrics. "Business executives often want the CIO to do both roles," Mangan says. Particularly during a down business

Are You Ready for a Deputy?

Six litmus tests

1 Do your CEO and company value IT as a driver of business and profits? If not, hiring a deputy could put your job at risk because IT's ability to play a big role in strategy is limited.

2 Is your IT organization stable and performing optimally? If not, you should not hand over the reins until the internal problems are fixed.

3 Do you have the proper experience and skill set to move away from operations and technology, including business and sales experience, solid relationships with other executives, and an ability to see the needs of the enterprise as a whole?

4 Will you regret leaving behind the day-to-day technological and operational duties? Are you comfortable delegating the majority of daily IT management to another person? And are you comfortable with taking on a position that will have less quantifiable measures for your performance?

5 Politically and financially, will your company support another layer of management by creating a deputy position? Internal staff may revolt, and senior management may punish you later if the change does not produce results as quickly as you had predicted.

6 Do you have the right person to fill a deputy CIO job? The person must be well-respected with the appropriate background in management, operations and technology. If you don't have this person in-house, you must weigh the risks of bringing in an outsider who might not be as readily accepted. **-P.S.T.**

market, there's a risk that the two-headed CIO structure could attract the red pencils of the cost-cutters.

But the way Hughes looks at it, splitting the CIO job has enabled him to *better* justify his spot on Deutsche Financial's organizational chart. "My focus on e-business began to identify cost savings and revenue opportunities that more than offset the additional costs associated with the promotion [of Halloran]," he explains. Hughes also believes IT has achieved better ROI because he now has time to scope out projects more accurately.

While the deputy CIO model is not appropriate for all companies and situations (see "IS Architecture," Page 94), the emerging trend of splitting the CIO role into two jobs is indicative of the rising stature of the office. Still, IT execs have to really love playing strategist, because there will always be regrets about leaving the shop. "I used to know every project and budget detail," Hughes grumbles. "Now I have no idea. It's very disconcerting." Conversely, number twos sometimes find themselves in a career quandary. "From a financial and promotions side, I'm pretty well stuck," Harris admits.

That's why CIOs such as Scott Ritchie of Advanced Internet Technologies in Fayetteville, N.C., prefer to keep both operational and strategy roles to themselves. "I think to some degree there is an advantage in being active both strategically and technically," he says. "There is something lost if you don't stay involved [operationally] at least at some level."

Yet for CIOs who have major responsibilities and opportunities to drive business change, the transition to a strategic focus is a natural one. "As we run IT more like a business, we really need to think about the structures business has," Ridout says. "This is a step in that direction." **CIO**

Do you want a deputy? Tell us why at letters@cio.com. Polly Schneider Traylor (polly@traylor.us.com) is a freelance writer in Boulder, Colo., specializing in technology, health care and business.

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Why Your Integration Efforts End Up Looking Like This...

*Getting different vendors to truly integrate
complex software is impossible.
But that doesn't mean a more limited
form of interfacing can't be achieved.*

BY CHRISTOPHER KOCH

Reader ROI

- ▶ Learn why software cannot be truly integrated across multiple vendors
- ▶ See the difference between integration and interface
- ▶ Discover how multivendor packages can work

PHOTOS BY CARL TREMBLAY



TO SELL A MULTIMILLION-DOLLAR software system to a big company, a vendor needs a showcase customer. Jay Shreiner, former CIO of the cereal giant Kellogg, played that role for Oracle, which sells, among other things, ERP software. As showcase customers go, Shreiner was ideal: well known and good with customers and the press.

He needed to be good. Shreiner was helping the Redwood City, Calif.-based Oracle sell a radically ambitious software product. Launched in 1996, Oracle CPG (consumer packaged goods), promised to integrate four complex software packages from four different vendors—Oracle's ERP software, Indus's enterprise asset management, Manugistic's supply chain management and IMI's order management—into a seamless whole. The combination of software would let CPG companies, which manufacture just about anything sold in a



ERP Integration

supermarket, run all aspects of their business, from estimating product demand to manufacturing to delivery. Oracle pledged to take responsibility for the integration and support of all of the separate software within CPG.

From a marketing perspective, CPG sounded great. Business executives in the consumer packaged goods industry saw Oracle's grand vision as a way to take a particularly angry monkey off their backs: the need for their own IT departments to do the work of integrating software from different software vendors.

Shreiner also saw it that way. He met with skeptical techies from potential CPG customers and did many interviews with the press affirming his faith in Oracle's ability to pull off this integration miracle. Why did Shreiner put himself on the line for Oracle? Because he was deeply invested as CPG's first customer. According to one source close to the project, Kellogg spent at least \$10 million and devoted as many as 30 programmers over the course of more than three years to helping Oracle piece together the CPG software package. In return, the Battle Creek, Mich.-based company was able to influence the features and functions of CPG to meet the cereal company's particular needs. Kellogg was the "poster child" for the Oracle CPG product, says the source.

But after three years of trying, CPG never worked at Kellogg—or anywhere else for that matter—at least not the way Oracle had



Jay Shreiner, then CIO of cereal giant Kellogg, made the mistake of being Oracle's showcase customer for its ill-fated CPG package.

promised it would. "No one ever got CPG up and running [in its full form]," says Dave Boulanger, research director for enterprise management at AMR Research in Boston. "It was never completed." Some customers got pieces of CPG running, he says, but not the full product.

Donald Klaiss, Oracle's senior vice presi-

dent of applications development, disagrees. He says that CPG was completed and that Oracle supports the software today. "We had an aggressive plan with our software partners to build integrations between the different pieces of CPG, and those were all built," Klaiss says. But former customers claim that Oracle did fail to finish CPG, and that failure cost them millions. "Millions thrown down a rat hole," says one former CIO and CPG customer from the food

Ramon, Calif., ended up in bankruptcy after spending millions trying to get CPG up and running.

What the CPG debacle demonstrates with frightening clarity is that the task of getting a host of different vendors to integrate CPG complex software programs to the level that Oracle aspired to with CPG is more than difficult; it's impossible. "If you had to point a finger at the root of the problem, it was the integration," says Boulanger. "They could never get the different systems to talk to each other adequately. It was like trying to tie them together with bailing wire."

"It's impossible to try to integrate four pieces like that from different vendors into a single product," agrees Barry Wilderman, a vice president for Stamford, Conn.-based Meta Group.

Yet in the years since CPG was first introduced, the trend toward multivendor software packages has only increased. More and more vendors are banding together to try to increase the breadth of their product coverage to span such realms as e-commerce, Web-based procurement, CRM, ERP

CPG never worked at Kellogg—or anywhere else for that matter—at least not in the way Oracle had promised it would.

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It's a fact of IT life that no single vendor can provide all the software necessary to run a business. CIOs are often left with the daunting task of trying to cobble together different vendors' software packages themselves. And it's a job they are increasingly unprepared to do as cost-conscious IT departments shed their in-house software developers. By buying more software packages from vendors, companies are increasingly beholden to those vendors to do this integration work for them. And the work itself is crucial. If the links between a company's warehouse software system and its finance system break down, its ability to ship goods and close its books grinds to a halt. As companies from Nike to Whirlpool to Hershey have discovered recently, CIOs who can't master the links between big software packages are putting the very survival of their company at risk.

So how do CIOs find their way out of this mess? By finding out what vendors really mean when they say their product is "pre-integrated" with a software package from another vendor.

Not Quite Integration

The world is filled with press releases and trade show booths in which vendors promise "full integration" among their products. But integration can mean two different things: one relatively easy to achieve, the other maniacally difficult.

On the maniacal side is true integration, in which the guts of the two software programs are linked together to look and act like a single software program. They are built using the same basic programming technologies, share the same user interface and use a common data model, which means they refer to information the same way. In a single vendor's ERP software, the system's different software components—such as HR, finance or order management—are all tightly linked. Make a change in a customer's order in the warehouse, and the folks in finance will see their receivables total change auto-

matically. The business benefit of this type of integration is speed. "If you're a company like Gillette or Colgate Palmolive, you need computer systems capable of responding immediately to Wal-Mart, to say 'I have product and can ship it now,'" says AMR



Even Oracle CEO Larry Ellison was publicly acknowledging problems with CPG by 1999.

Research's Boulanger. "Real-time response to customers with accurate data is critical to staying in business."

Achieving true integration is extraordinarily difficult for even one vendor to pull off, not to mention the four vendors that Oracle tried to put together in CPG.

According to Klaiss, Oracle achieved this level of integration with one vendor, Datalogix, by buying the company and rewriting the software to fit with Oracle's own technology and data model. But the other pieces of CPG were not integrated to become "a single product," as Oracle's original CPG press release promised. "Not exactly, no," says Klaiss.

Instead, Oracle and its CPG partners wrote software interfaces designed to translate information from one CPG component into a form that the other CPG components could understand. This kind of interface integration allows different software programs to exchange information, much like two kids passing notes in class. Though cheaper and less complex than true integration, interface integration is prone to error and moves infor-

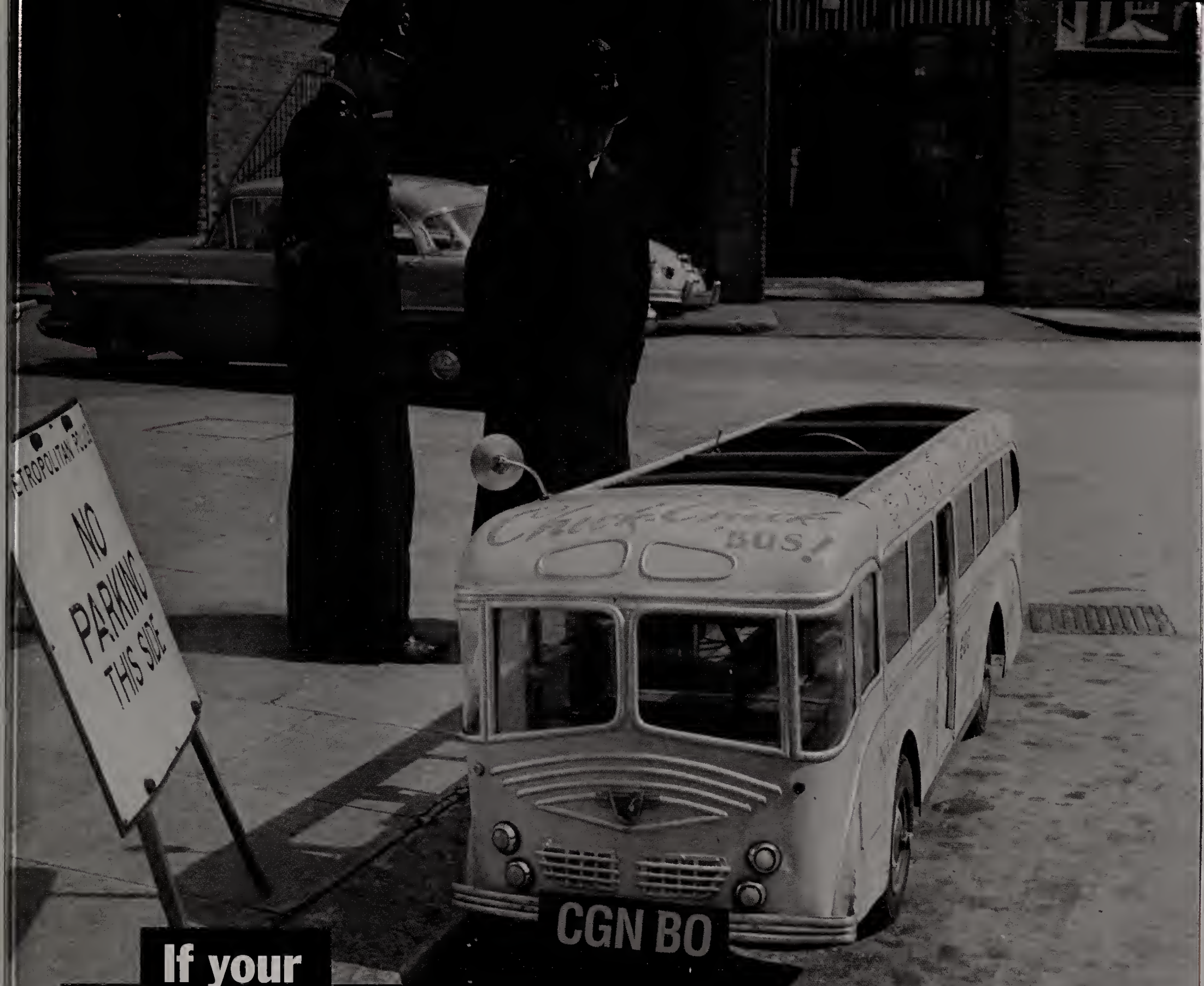
mation more slowly than true integration.

And even interface integration can be difficult when you're trying to do it across four different vendors, as Oracle did with CPG. Oracle and the other CPG vendors had to agree to the specific types of information

that should be shared among their programs and then write an interface for each information exchange—more than 100 interfaces altogether, according to Klaiss. CPG customers say the sheer number and complexity of the interfaces led to problems and repeatedly missed deadlines for CPG releases. "Getting everyone at those different partner companies to agree and to work around a common development and rollout schedule was a virtually impossible task," says one former CPG customer from the food industry. Klaiss acknowledges that some CPG releases were late, adding that "it's much more difficult to do integration [across multiple vendors] than if you manage all the resources yourself."

Marital Difficulties

Multivendor alliances aren't just about software integration, however. When vendors agree to integrate their software, they are also agreeing to integrate their companies—which can be much harder to pull off. One sure route to disaster for CIOs is choosing a multivendor alliance where the vendors compete over the same



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Consider the alliance between procurement software maker Ariba, supply chain specialist i2, and their matchmaker, IBM's consulting division. From the moment the alliance was announced in March 2000, IBM became the shrink attempting to hold a dysfunctional marriage together. Ariba and i2 coveted each other's software—indeed, while proclaiming loyalty to the alliance, Ariba tried to buy Agile, a supply chain software vendor that competed with i2 (the deal fell through), and i2 bought a procurement software vendor, RightWorks, that competed directly with Ariba. The two vendors also coveted each other's customers. Unlike CPG, i2 and Ariba never tried to integrate their two products into a single unit. Customers who wanted the two software programs to communicate had to pay IBM to make it happen. The shaky alliance ended earlier this year.

"By definition, all these folks eventually become competitors," says Jim Prevo, CIO and vice president of Waterbury, Vt.-based Green Mountain Coffee Roasters, which bought into a software alliance between ERP vendor PeopleSoft and Vertex, a small software company that does tax calculations on online purchases. "They may do a good job of interfacing with each other, but they are always looking to expand into new markets and add new functionality. It's just the nature of the business," Prevo says.

Even if they're not in direct competition with one another, vendors would much prefer to have their best programmers working on new software rather than building integration links. The complexity and limited payback of integration work inevitably leads to problems and delays. And customers of the alliance can pay a heavy price for them.

Promises, Promises

That's what allegedly happened to Tri Valley Growers, the farm co-op behind such well-known brands as Redpack tomatoes and Libby's fruits, which had \$8.8 billion in revenues in 1999. In 1996, the co-op's business and technology leaders wanted to buy a fully integrated ERP system to run the entire busi-

10 Steps Toward a Successful Multivendor System

1. VISIT THE DEVELOPERS' OFFICE. There is no better gauge of vendors' investment in their alliances than the number of developers they devote to the integration effort. Demand to visit the shared office where developers from both companies are working together on the integration. If such an office doesn't exist that means that neither company is serious enough about the alliance, and you should walk away.

2. GET THE VENDORS TOGETHER IN A ROOM AND OBSERVE HOW THEY WORK WITH EACH OTHER BEFORE SIGNING UP. "You can tell when vendors are making their first sales call together, it's like watching doubles partners who have never played tennis together," says Bob Renner, CTO of ForestExpress, an Atlanta-based e-commerce exchange for the forest products industry. "We made [the partner vendors] demonstrate their products to us together as a team and observed how they worked together."

3. CUSTOMER REFERENCES FROM VENDORS HAVE LITTLE VALUE. No two installations of big, complex enterprise software such as ERP are alike. Thus, no reference customer can tell you how a multivendor ERP package will work in your company. But if you want some guideposts, demand a list of all the vendors' past and present customers, not just the one or two they've picked to showcase.

4. TWO IS BAD ENOUGH; THREE IS IMPOSSIBLE. It is difficult enough for two vendors to coordinate their software releases and integrate them. More than two and the task becomes impossible—so keep it simple.

5. GET ONE THROAT TO CHOKE. Insist that one vendor be responsible for supporting the multivendor integration. If responsibility is shared among them, there will be finger-pointing when something goes wrong and fixes will take longer.

6. VENDORS MUST BE COMPLEMENTARY, NOT COMPETING. Partner vendors should not covet each other's sales markets or software functionality. If they do, the alliance will fail—a victim of competition.

7. BE PREPARED TO WAIT. Partner vendors will always attend to their core products first. Integration upgrades will inevitably lag behind upgrades of the individual software packages.

8. BECOME A MARKET WATCHER. CIOs have to become financial and technology analysts and determine whether vendors' alliances will hold together.

9. DON'T ACCEPT "COMING SOON" INTEGRATION. "A vendor's sales organization is always ahead of its development group," says George Ryerson, director of IT for WestFarm Foods. "The salesmen would say, 'We can't show you because it's in the next release, but it'll be a knockout.' We used to break out laughing when we heard that one."

10. IF THE VENDORS CAN'T DELIVER, ACCEPT FAILURE AND MOVE ON. If the integration between two vendors' software isn't working right or isn't complete after a year of trying, stop the project. Prolonging the agony will cause real damage to your business.

—C.K.

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ERP Integration

ness, from the vine to the grocery shelves. Impressed by Lead CPG Salesman George Van Ness, Tri Valley's business leadership quickly bought in to Oracle's vision.

At a meeting with Tri Valley in late 1996, Van Ness "acknowledged that there were integration issues to be worked out, but he kept assuring our executives that the problems would be solved and that [Oracle] would support us, no matter what," says a CPG project participant at Tri Valley who did not want to be identified.

That assurance was enough for Tri Valley's business leaders, says the source. "There was some good personal chemistry between their management and ours." That led Tri Valley to purchase the full Oracle CPG suite for \$3.1 million in April 1997.

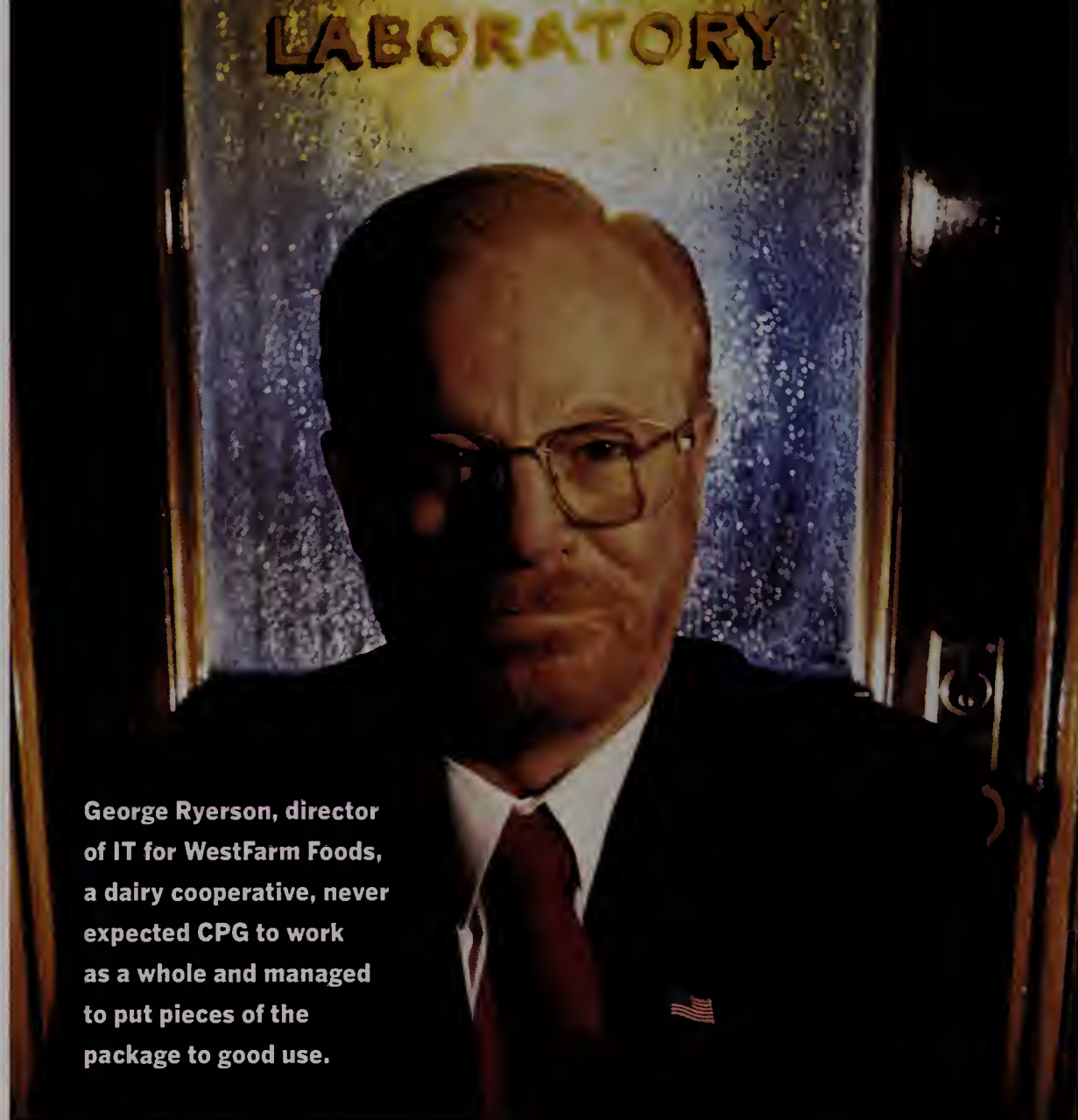
The evolving difficulty of the CPG integration at Tri Valley was reflected in Oracle's estimates for the consulting costs on the project. In November 1996, Oracle's estimate was \$300,000 to install the software. In May 1997, when the final consulting contract was signed, that figure had ballooned to \$2.7 million, according to court documents obtained by *CIO* from a lawsuit that is still in progress.

It wasn't long before the relationship between Oracle and Tri Valley began to sour. Tri Valley's technology project team complained repeatedly that the CPG software that Oracle's project leaders had said was finished was really not, and that the pieces Oracle did provide did not work when loaded into Tri Valley's computer systems. Tri Valley says Oracle kept promising to fix the problems with new releases of the CPG software but that Oracle continually missed its deadlines for completion of those releases.

Tri Valley dropped its CPG project in 1998 and replaced it with Oracle arch-rival SAP's R/3 system at an additional cost of \$1.2 million, according to court documents.

CIO.com

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George Ryerson, director of IT for WestFarm Foods, a dairy cooperative, never expected CPG to work as a whole and managed to put pieces of the package to good use.

But the last-minute switch couldn't save the co-op. Tri Valley declared Chapter 11 bankruptcy last year and has since sold off its brands. What little remains of Tri Valley—mostly lawyers and accountants—is suing Oracle for \$20 million for its failed CPG installation. Though the company does not go so far as to blame CPG for the collapse of the company, its lawsuit claims that the co-op would have saved more than \$5 million per year if the software had worked. An Oracle spokesperson said the company has denied Tri Valley's allegations in court, but said she could not comment while litigation is pending.

The lesson of Tri Valley's experience is clear to one IT manager who worked on the project. "The nontechnology executive management has to take the technical details seriously and not consider them something that the geeks will work out amongst themselves," he says. "Those technology difficulties are, in fact, serious business risks."

By 1999, even Larry Ellison, Oracle's CEO, was publicly acknowledging problems with CPG. But he blamed others for its woes. At a press conference following an

Oracle users' group meeting in April 1999, Ellison said about CPG, "[It] sounded great, but the trouble is we can't control our [CPG] partners," he said. "We're going to be very careful going forward not to take responsibility for something someone else has to do. That was a huge mistake, and we will never do it again." At Oracle's user group meeting in Hawaii in October 2000, Ellison flatly told customers that they should turn their back on CPG and upgrade to Oracle's new software package, 11i.

By then, Shreiner had left Kellogg after more than three years of trying to make CPG work. To his credit, he never hid the fact that the software was incomplete, sources say. "[He] was consistent with the underlying tone that CPG needed to be worked out and that there were issues," says one former IT manager at Tri Valley. Referring to Shreiner's exit in early 2000, another source close to the project says, "There were people whose careers depended on getting CPG up and running." Shreiner was one of them. (Responding to our letter requesting an interview, Shreiner wrote, "I do not feel it would be appropri-

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ERP Integration

ate to comment or contribute to this story.”)

His successor, Rajan Nagarajan, announced in May that Kellogg in the United States would begin the process of converting over to SAP's ERP software, which it acquired when Kellogg bought cookie-maker Keebler. The new system will eventually erase whatever traces of CPG remain at Kellogg worldwide, according to a source close to Kellogg. Nagarajan declined to be interviewed for this story.

George Ryerson, director of IT for WestFarm Foods, a Seattle-based dairy cooperative, managed to hang on to his job

CPG software that WestFarm bought.

He also rode herd on the two CPG software vendors, Oracle and IMI, that installed software at WestFarm. He developed a “black book” on the two vendors and gave a copy of it to all users of the system. “It’s a customer service guide based on the problem type, the vendor, the primary contacts at each vendor and how to [get the vendor’s immediate attention] if the system is down,” he says.

Because Ryerson made very few modifications to the CPG software, it was easier to get Oracle and its partners to accept responsibility for bugs. “That saved our bacon,”

he says. Even with minimal modifications to CPG, however, the installation was still a challenge, though Ryerson won’t elaborate. “I’m not going to tell you how many [official CPG bugs] there were,” he says. If other CPG installations are any indication, there were many.

Oracle stopped selling CPG in late 1999 and Klaiss says the software is being incorporated into Oracle’s new suite. So Ryerson is now faced with a choice: either upgrade to 11i, as all CPG customers are being encouraged to do, or start from scratch with another ERP vendor.

Multivendor Success

Not all multivendor alliances end in disaster, however. That’s because they have started out with the understanding that all they will achieve is interface integration.

They also understood from the get-go that vendors are like two cats in the living room: One has to willingly cede the higher spot on the furniture to the other if there is to be any peace between them.

David Root, CFO for Eagle’s Flight, a Guelph, Ontario-based management training company, thinks he has found the right combination of partners in Great Plains, a Fargo, N.D.-based maker of ERP software for small and midsize companies (recently

acquired by Microsoft), and Siebel, the giant San Mateo, Calif.-based CRM software company that focuses primarily on the Fortune 500. In this multivendor relationship, Siebel is the alpha cat. It has stronger brand recognition and a much larger customer base than Great Plains. So Great Plains has been willing to take on the lion’s share of the integration work and provide all the support for customers. “We accept what Siebel throws over the fence to us, but we do have a voice in deciding what they throw,” says Holly Holt, senior product manager of front office with Great Plains.

More important, the integration between the two products is of the note-passing variety rather than the hard-core melding that Oracle aspired to with CPG. The note-passing mechanism makes upgrading the integration simpler and cheaper, and users can adjust the frequency of the note passing to get to near real-time. But the work of integrating the software has been nowhere near that fast. “Things do move more slowly than if we were dealing with each vendor individually,” says Root. Now that Microsoft has purchased Great Plains, Root will be watching carefully to see if the pace slows any further.

Green Mountain’s Prevo finds that he often has to herd his vendors into a room to get them moving. “We find that we have to get PeopleSoft and Vertex to talk together in front of us to get a solution that works,” he says.

Yet despite all the potential problems with multivendor integration, Prevo and Root say they have little choice but to try to make it work. “We looked into the cost issue of integrating something ourselves versus buying preintegrated software, and there was no comparison,” says Root. But changes to Great Plains software alone would have required his staff to rewrite the interfaces between Great Plains and Siebel every six months. “We just couldn’t have afforded to do it,” Root concludes. **CIO**

Got any integration stories? Contact Executive Editor Christopher Koch at ckoch@cio.com.



David Root, CFO for management training company Eagle's Flight, has found a way to make a multivendor ERP package work, but without true integration.

despite being a CPG customer. He had an advantage. He came to CPG relatively late in the game, beginning his implementation in February 1999. By then the myth of true CPG integration had been dispelled. WestFarm Foods bought interface connections between select pieces of software from the original CPG portfolio. Throughout the six-month installation, Ryerson minimized the changes he made to the three pieces of



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Ohio CIO Gregory Jackson has found that federal regulations thwart state CRM projects.

For more than 200 years, state governments have had a reputation for bad service. Now state CIOs are trying to change that using CRM. BY STEVE ULFELDER

How to Keep the Citizens SATISFIED

H

HERE'S ONE EXAMPLE THAT OHIO CIO GREGORY Jackson likes to give to prove that government agencies need customer relationship management: "Every year, citizens have to tell the Department of Revenue what their address is," he says. "But then say we inform them that their driver's license is about to expire—that [notice] may go to an old address. People get frustrated when they have to go to court [to fight tickets that come as a result of] notices they never got."

And that's what citizens are treated to merely for moving. More complicated processes, such as starting a small business, require extraordinary amounts of time, as budding entrepreneurs may need to visit a dozen agencies for licenses and permits before opening their doors. Even on the Web, agencies' sites have almost

Reader ROI

- ▶ Find out why state governments need customer relationship management
- ▶ Learn best practices for deploying CRM in the public sector
- ▶ Discover how CRM is already improving government service delivery

PHOTO BY JOE HARRISON

always been siloed away from each other—not just in Ohio, but in every state. The problem? Citizens think of state governments as single entities, like a big department store, but state governments don't act that way. The highly disjointed nature of state government makes even the simplest procedure complicated, resulting in states with a dismal record for customer service.

That has been true for more than 200 years, but what's different now is that information technology, specifically CRM, gives states the tools to do something about it. State CIOs say the same technology that private companies use to track your purchases and help salespeople suggest new products can be used to serve up all the forms an entrepreneur needs to start a business, inform poor citizens about benefits they can apply for, and make government call centers beacons of assistance.

But the obstacles to deploying CRM in government are countless, state CIOs say. Agencies don't see the value in sharing information, and institutional hubris often makes them reluctant to learn more about the citizens they serve. State laws often prohibit agencies from sharing information with each other at all. There's never enough money. Federal regulations that govern many state services seem to promulgate the very silos CIOs would like to eliminate.

Despite those hurdles, some state CIOs—prodded by governors who seek to revamp the way their states treat taxpayers—have launched CRM programs modeled on those in the private industry. Those making progress are doing so not by tearing down the barriers but by choosing projects with the fewest obstacles to success to demonstrate CRM benefits. Experts say the sheer scope of states' systems requires that approach; Larry Herman, a managing direc-

tor at KPMG Consulting, calls it the only workable one. Although it remains to be seen whether these early successes will build the critical mass CIOs hope for, from these projects a body of best practices is emerging that can serve as a road map for government CIOs charged with meeting a new set of demands.

THREE BARRIERS: PEOPLE, POLITICS AND PRIVACY

The government worker's mindset—in popular culture, anyway—is 8 to 5, not 24/7. Delight the customer? Bah. Tolerate him. If he's lucky.

"If you need a permit, we're it," says Stephanie Comai, director of E-Michigan, the state's online-government initiative. "Let's face it, that can lead to a lack of focus on customer service."

Arizona CIO Rick Zelznak says the economy and more pressing projects push CRM to the back burner.

CIOs and analysts agree that the first, most vital step in implementing a CRM program is educating workers on the importance of great customer service. Sharon Ward, vice president of enterprise solutions at Framingham, Mass.-based Hurwitz Group, says, "CRM is not embodied in software but in attitude. The desire to please [the customer] has to be inherent in people first."

Private companies, too, have to sell employees on the value of CRM. But it can be an especially daunting task to retrain government workers, many of whom—because of strong unions—have no real fear of losing their jobs if they don't change.

Meanwhile, like their private sector coun-



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terparts, government CIOs face budgets that are hardly bottomless. But state CIOs' plans are vulnerable to the shifting winds of politics. Most states with aggressive CRM plans enjoy the support of governors who have declared that their state must be more responsive to its citizen-customers.

However, it's easy to "reinvent government" in a press conference. What happens when state coffers shrink, as they have in the present economic downturn? Or when a CRM champion loses a reelection campaign?

Rick Zelznak, Arizona's CIO, says the faltering economy, along with the need to shift funds to respond to the Sept. 11 terrorist attacks on New York City and Washington, D.C., will push CRM to the back burner. Before the attacks, budget constraints forced his department to table several promising CRM programs in favor of those with more immediate payback, including a thorough revamp of the state's tax-collecting system, which will boost revenues almost immediately. "Our governor's office was asking agencies for 4 percent budget reductions prior to Sept. 11," he says, adding that he

anticipates a request for deeper cuts in the wake of the attacks.

But Ohio's Jackson says that's not necessarily the case in his state. There, CRM initiatives usually spring from individual agencies whose revenue sources and security preparedness vary wildly. "It's unlikely that these agencies will be faced with choosing between CRM funding and security funding," Jackson says.

Zelznak and Jackson agree that while it's

CRM project seeks to cut across agency lines. But federal aid, which may provide a big chunk of state agencies' IS budgets, is usually targeted at a specific department, and efforts to divert the money elsewhere—regardless of the potential benefit to targeted citizens—are rebuffed by the feds. When Ohio announced it wanted to build an online portal to make its services more easily accessible to citizens—a common first step among states implementing

State CIOs must develop policies for data sharing and communicate them to all vendors involved in a CRM project.

appropriate that security dominate their IT landscape right now, CRM programs remain vital and will eventually reclaim mind-share. Zelznak believes Arizona legislators grasp the potential benefits of CRM.

State CIOs hoping to use federal funds to help launch CRM programs often run into a catch-22. Almost by definition, a

CRM—Jackson thought the state had a good idea for funding the portal; it planned to get each agency involved in paying a portion of its fiscal 2002 budget for development. So in April, Ohio sent a letter to the U.S. Department of Health and Human Services—which partially funds numerous Ohio agencies seeking permission to use federal money for the project. The feds said no because according to the letter Jackson got back from the department, the portal would benefit all citizens' access to government, not just those citizens the federal agency is focused on, and thus must be paid for with state funds. Now the portal is progressing at a slower pace until Jackson can come up with another plan.

Finally, one of the most sensitive IT issues for public sector IT executives is data privacy. In the private sector, companies have the freedom to combine databases so that customer service reps can access a 360-degree view of a customer, including past sales history, demographic data and so on. State CIOs can only envy such liberties. For them, the appeal of the unified database is just as strong as for their corporate counterparts, but they're stymied by strict

Continued on Page 132

State CRM Tip Sheet

Four steps to succeeding with CRM in government

1. START AT THE TOP. Most states in the vanguard have been pressured by governors who demanded—often after making campaign promises—that the government model its service delivery on that of private industry. Rishi Sood, a principal analyst at Gartner, calls lack of executive sponsorship one of the top reasons for state CRM failures.

2. PILOT SYSTEMS WITH EARLY ADOPTERS. Agency heads who are enthusiastic about improving service will be most eager to sign on to a CRM project. Do small projects with them to demonstrate the benefits to others. That's a textbook way to build support, experts say. Job one for state CIOs is to "ID your

stakeholders, then tell individual agencies what their benefit will be," says Sood.

3. GET WORKERS ON BOARD. The most difficult job when implementing CRM is getting bureaucrats to rethink their attitude toward customer service. "The 24/7 aspect [of the Internet] runs counter to the 8-to-5 mentality of government workers," says Darrell West, director of Taubman Center for Public Policy at Brown University in Providence, R.I.

4. GET CITIZEN FEEDBACK. If the public doesn't see improvement, you've wasted your time and money. Find out what people who use each agency's services want, and make sure your project delivers it. **—S.U.**

STRATEGIC DIRECTIONS

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CRM: Now It's About Integration

The more you know about your customers and prospects, the more you can manage your relationships with them, responding to and even anticipating their changing demands without sacrificing margins.

These days, managing customer relationships means moving "ownership" of the customer up to the enterprise level. Such a perspective—the much-touted 360-degree view—can be achieved only when each customer touchpoint is automated to support customer interactions that are coordinated across *all* touchpoints. Thus, wide-ranging technology initiatives—Internet-enablement, data warehousing, sales automation, marketing automation, call center and point-of-sale upgrades, links between front- and back-office operations—become part of an enterprisewide customer relationship management (CRM) effort.

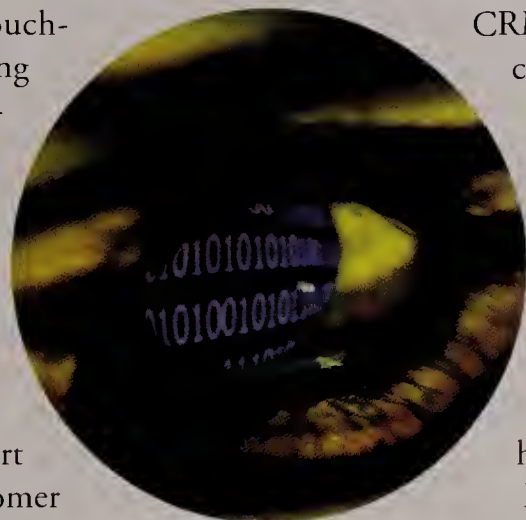
But effective CRM is not achieved with technology alone—the effort also centers on people and processes. Before considering CRM technologies, CIOs and others driving CRM initiatives need to focus on business issues, including the organization's customer relationship model and the ways that customer interactions occur. Possessive tendencies in various departments and sales channels responsible for customer interactions must be forsworn: every customer and prospect

belongs to the enterprise—not a particular department, channel or salesperson.

Chances are the business as a whole will need to make changes to customer interaction processes; these processes must be understood and redesigned prior to implementing CRM technologies. And because CRM initiatives trigger process changes, it's important that employees get the training they need—including programs that clearly demonstrate the advantages and benefits of new processes and technologies—and the opportunity to develop new working habits.

Many argue that the impacts of CRM initiatives are too vast to implement in a single, sweeping effort; better to implement piecemeal. But the plan behind the implementation needs to be an enterprisewide vision that addresses all aspects of an organization's customer interactions and data.

This final supplement in the 2001 *CIO Strategic Directions* series delivers the information and insight that CIOs and IT executives need about CRM business strategies as well as the solutions and tools enterprises require to implement them. **SD**



STRATEGIC DIRECTIONS

November 15, 2001

Inside this issue:

S4 Making CRM Pay Off

Companies are focusing on their relationships with customers for one simple reason: customer satisfaction pays.

S9 Of Data and Analytics:

Focusing on Relevance

"CIOs have to understand that the focus must be on the relevant data that's needed to better understand and to enhance the quality of interaction and overall relationship with customers."

S11 Channeling:

Front, Back and Sideways

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Making CRM Pay Off

Companies are focusing on their relationships with customers for one simple reason: customer satisfaction pays.

A one-percent increase in customer satisfaction, reports Claes Fornell, director of the University of Michigan's National Quality Research Center, relates to a three-percent increase in market capitalization.

Except for mom-and-pop shops, these days customer relationship management (CRM) is pretty hard to accomplish without information technology. But technology merely implements customer-focused strategies and processes. If your company's CRM strategy is flawed, or if your customer-facing processes are dysfunctional, CRM technologies won't help your business.

Eyes on the prize

So what's a CIO to do? Begin with business goals.

"The key is to start with goals that relate to the customer," says Scott Nelson, vice president of Gartner's CRM practice. "Such areas as market share, customer satisfaction or cross-sales ratios are all good places to start. Which of these are represented in your organization's strategic plan? Which ones already have in place tactics that your firm is pursuing?"

"Once that's done, you add in the customer's perspective. What does a day in the life of a customer look like right now? What should it look like? Ideally, you'll align your goals with the customer's, and that's where CRM should yield real benefits," Nelson adds.

Specifically, these benefits include:

- Understanding your customers' needs more completely than ever before
- An ability to persuade your customers to initiate more profitable transactions
- Reducing customer defections
- Identifying those customer relation-

Spending on CRM Applications



2000
\$6.2 Billion



2005
\$14+ Billion

Source: International Data Corp.

ships that generate the most profits and are therefore worth investment of the most corporate resources

- Knowing which new customers are worth attracting

Hewlett-Packard used to spend \$300 million marketing to Asian Pacific prospects through resellers, but couldn't track results. When the company decided to sell directly, it turned to Kana for help managing marketing campaigns and analyzing the data generated. In the first six months, HP boosted direct marketing campaign revenues by more than 250 percent, cut channel switching by 100 percent and cemented customer loyalty.

When it saw satisfaction levels decline, Union Bank of Norway, one of that nation's largest financial institutions, discovered how little it really knew about its customers. After investing in NCR's CRM solution to manage marketing campaigns and analyze results, the bank is upgrading services for 2,000 customers a month and reports revenue increases greater than costs: its CRM efforts are generating profits.

By using analytic software from the SAS Institute, retailer The Limited has achieved a 400 percent return on investment (ROI) by segmenting its customer database to optimally target for market-

CRM strategy: how much is enough?

When it comes to customer relationships, does your company need to undertake comprehensive change or target particular issues? Your answers to these questions will help you figure it out:

- Who are our customers? Who else should be our customers?
- What kind of feedback do we get from our customers?

- In what ways do we communicate with our customers?
- What do our customers expect of us, now and in the future?
- Are we living up to our customers' expectations in terms of quality, service and responsiveness?
- Which of our processes contribute to gaps between customer expectations

Minimize the Risk of Poorly Managed Customer Contacts

APAC Customer Services, Inc. (APAC)'s ASP product, e.PAC, reduces business risk with a proven tool set and the customer contact intelligence to consistently make the most of each customer interaction. Headquartered in Deerfield, Ill., APAC has two corporate offices, nearly 50 customer interaction centers and approximately 9,000 interaction workstations.

APAC's proprietary e.PAC technology platform delivers both outsourced and ASP models, allowing highly customized solutions defined to meet your business needs. This tool helps APAC consistently improve its clients' bottom line through customized, integrated customer experience management (CEM) solutions, created specifically to focus on driving client's revenue and business goals.

Ease Integration, Provide 360-View of Customer Experience

e.PAC eases integration of third-party applications and databases for meeting quick market delivery while consolidating multiple contact channels. Using advanced CTI capabilities, reporting and a consolidated contact management database, the e.PAC platform allows APAC clients to gain a 360-view of their customers' experience.

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Scalable to grow with your needs, APAC's application can include any combination of:

- An integrated knowledge engine to drive both the calling and client-contact processes with your business logic and rules
- Inbound and outbound customer contact management
- Proven telephony routing and Internet-based communication
- Internet chat, collaboration, e-mail and Web call-back communication
- APAC technology and customer service experts to design and deliver not only implementation services but ongoing performance monitoring and improvement
- Platform customization to match application functions to your business
- Onsite and online training for your customer service representatives
- 24/7 help desk support

Flexible, Variable Cost Structure

In addition, one of the key differentiators of APAC's product is the flexible, variable cost structure that means that you pay for only what you use. APAC's solution allows you to implement large programs and test other channels for effectiveness without adding high costs or increasing the risk to your company.

By deploying e.PAC in their centers, APAC clients benefit from greater customer loyalty through attention to customer satisfaction and improved return on investment through maximized sales opportunities. APAC clients minimize the risk of poorly managed customer contacts.

For more information, contact www.apaccustomerservices.com.

ing campaigns and help influence customers' channel choices.

No wonder the Rubin Report ranks CRM spending as the top priority in dynamic industries—such as financial services and high tech—where customer “stickiness” matters because customers tend to be fickle. Indeed, the Meta Group reports that every year, on average, the financial services industry loses between 10 percent and 20 percent of its cus-

tomers; replacing them costs \$200 to \$300 each. Done right, CRM solutions can put a dent in those numbers.

“In essence, CRM makes each customer contact more effective,” says Carlos Galarce, senior vice president, Information Office, APAC Customer Services, Inc. “Those customers who feel that the company understands their needs and see the company as a good fit because it offers them personalized services and

products historically spend at least 30 percent more on average than customers who do not have the same loyalty.”

Beginning with the bottom line

The trick comes in maneuvering CRM strategies and tools into position while also reducing risks in IT spending. During these lean times, the emphasis remains on ROI rather than transformation; growth at any cost is not acceptable.

Yet CRM differs from other enterprise software investments. Unlike enterprise resource planning (ERP), which cuts costs and improves efficiencies to help the bottom line, CRM is also about increasing top-line revenues. So CIOs charged with CRM implementation need to be especially business-savvy, since the effort requires understanding how technologies can add revenues by improving customer interaction.

“Many areas of revenue enhancement are hard to quantify up front, before the

and what we actually deliver?

- How can we change our processes to close these gaps? To increase organizational efficiency?
- Do we have the information we need about our customers? Are we sharing it across departments in a timely way?

Be sure to talk with the folks in the trenches—not just high-level execu-

tives—and customers, too, about how interactions with customers happen and how information about these interactions is gathered and handled. Once you've pinpointed the processes that need improvement, prioritize what to work on and only then seek out software and services that can address the needs you've identified.

CRM investment is made. So for example, CRM may produce more satisfied customers, and that may mean more revenue—but how much? That's hard to say," observes Gartner's Nelson. "Gartner recommends that you justify the project around cost saves, but look to revenue enhancement as the real long-term value. Once you have some objective data to work with, it becomes easier to build a revenue enhancement case in the future."

Honing long-term plans

Then there's the technical complexity of CRM. It becomes apparent rather quickly that what's involved is a process of successive integrations that lead, finally, to a customer interaction capability supported by all of your enterprise's business and technology infrastructure. This kind of robust integration is essential if the many applications that handle the complex interconnections associated with customer interactions are to exchange data rapidly.

Several technologies—including data warehousing and data marts, an assortment of analytic capabilities, marketing

automation, various front-office applications like sales-force and call-center automation, and links to back-end enterprise functions like ERP and supply chain management (SCM)—need to work together synergistically. When it's all fully engaged, a repeating CRM cycle can begin:

Detailed customer interaction data gets analyzed (eventually in real-time) and the results drive applications that generate and

Why CRM projects fail

- Lack of executive attention and leadership
- Stovepiped functional or business unit CRM initiatives that lack coordination
- Weak reengineering and change management to support customer-centric business processes
- Insufficient funding for CRM training and implementation

Source: Gartner

manage targeted marketing campaigns which will, in turn, drive sales and support interactions.

The resulting orders and other interactions are processed by sales applications and integrated into ERP and SCM suites; they also spawn customer interaction histories that feed into service and support applications.

The data derived from these new interactions then feeds successive rounds of even better analysis, campaign planning and further interactions.

The journey can get underway from several base camps:

- *"Traditional" CRM*, in which analysts rely on data warehouses and decision support applications to create models and plans that optimize customer service, sales and support processes
- *Front-office, customer-facing operations*—including sales automation, marketing automation, websites and the call center (quickly evolving into the Web-enabled customer interaction center)—that many companies have automated piecemeal with best-of-breed applications
- *ERP and SCM initiatives* to which CRM functionality is added
- *Outsourcing* all or part of a CRM initiative to an expanding range of professional services providers, application service providers (ASPs) and managed service providers (MSPs)

"Planned short-term CRM integrations should be part of an evolution to a long-term plan," notes APAC's Galarce. "This is the only way that companies can maintain short-term revenue and competitive goals."

Meeting the challenges

Obviously, pitfalls abound, and there have been plenty of reports of CRM implementation failures. A recent Alexander Group survey cites CRM failure rates of 50 percent to 90 percent among the 50 large, mostly business-to-business companies queried.

Analysts point out several reasons. One is the assumption that technology alone will solve customer problems—automat-

Turning Contacts into Relationships

Aspect Communications Corp. is the leading provider of business communications solutions that help companies improve customer satisfaction, reduce operating costs, gather market intelligence and increase revenue.

As a trusted partner of 76 percent of the Fortune 50, Aspect manages more than 3 million customer sales and service transactions daily. Aspect's CRM software platform and applications integrate voice-over-IP, traditional telephony, e-mail, voicemail, Web, fax and wireless business communications, while guaranteeing investment protection in a company's front-office, back-office, Internet and telephony infrastructures. Aspect's leadership is based on more than 16 years of experience and over 7,600 implementations deployed worldwide.

Focus on All CRM Components

Unlike other companies that offer only telephony, or data networking, or front-office or back-office software, Aspect does not focus solely on isolated CRM components. We focus on all of them—and synchronize them in a way that helps businesses boost sales and operating efficiency, turning contacts into relationships.

Effective customer relationship management (CRM) is essential if businesses intend to remain competitive in this economy. And more than any other company today, Aspect is uniquely poised to help businesses develop CRM strategies that help turn contacts into relationships.

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ing bad business practices and processes only makes things worse.

"Companies that do not consider business process *assessment* either before or in conjunction with a CRM technology implementation are limiting the total benefits of CRM," says Mary Wardley, director of CRM applications at International Data Corp. (IDC).

Another concerns lack of metrics—if you don't measure before and after performance, it can be tough to tell whether a project has been a success or a failure.

"If an organization starts with a strategy that is measurable and achievable in smaller steps," says Wardley, "the likelihood that it will be successful long term are increased. By having built-in measurements and checkpoints, any problems or missteps can be identified and corrected."

Additional challenges come in picking the right vendors out of the several hundred occupying a much-fragmented CRM marketplace. Most are highly specialized, fielding just one or two offerings. A few vendors offer CRM suites, but each has its limitations. Meeting an enterprise's CRM needs can require products and services from dozens of suppliers and creates customization issues that, analysts estimate, can cost two to five times the price of CRM software outlays.

"The ROI of a specific function can be calculated more clearly than for a suite of products," notes Ed Thompson, vice president of Gartner Research's CRM practice. "Therefore, the key when buying is to understand which functionality is critical, which is important and which is nice to have—then buy a suite for 70 to 80 percent of the functionality required and fill in the remaining 20 to 30 percent with point products which exceed the capabilities of the suite."

Beatriz Infante, CEO of Aspect Communications, sees it a bit differently.



Research by Accenture indicates that a \$1billion organization can add \$40 million to \$50 million in profits by pushing through 10 percent improvements in 21 key CRM capabilities.

"It may not be right for your business to immediately integrate everything but it may be right at some point in the future," she says. "So you certainly don't want to select solutions that will lead to 'stove-piping' and will be difficult to integrate when the time comes. The thing to do is create a long-term vision with several phases. But you don't want any one phase to make the next one difficult or impossible to add—if you do, you'll constantly be ripping out and rebuilding every time you want to change, and that is not feasible without the business suffering."

Damn the torpedoes

Certainly tough times have not kept CRM

from topping most CIOs' wish lists. A recent survey by Forrester Research shows that 45 percent of the companies polled are considering CRM projects and that more than a third have launched or completed implementations. Forrester analysts report that the large companies they queried spend between \$15 million and \$30 million a year on CRM-related software and services.

The good news is that plenty of firms are achieving the ROI goals they set for CRM. Recent research by AMR reveals that two-thirds of the companies examined indicate that ROI expectations—mostly related to reducing the costs of customer support—have been met or are on track.

Even the Alexander Group's survey indicates that those firms implementing CRM "correctly" saw average improvements of 13 percent in revenues, 17 percent in sales rep productivity, 22 percent in customer satisfaction and 28 percent

in selling time. Moreover, failed CRM implementations can be turned around, report Alexander Group analysts, with renewed pilot programs based on three elements:

- Analyze customer needs and design CRM solutions to address these needs
- Improve sales processes and translate these into incremental revenue targets for sales people
- Configure CRM functionality to the new sales processes

Research by Accenture indicates that a \$1billion organization can add \$40 million to \$50 million in profits by pushing through 10 percent improvements in 21 key CRM capabilities—including customer service, turning customer information into insight, partner and alliance management, e-CRM, sales planning and customer retention and acquisition. And technology, reports Accenture, can speed up the impact of CRM by as much as two-thirds. **SD**

Of Data and Analytics: Focusing on Relevance

"CIOs have to understand that the focus must be on the relevant data that's needed to better understand and to enhance the quality of interaction and overall relationship with customers."

So says Claudio Marcus, research director with Gartner's CRM practice, who adds, "Integration between operational and analytic CRM components is becoming increasingly important because it facilitates leveraging meaningful insights across all touchpoints in real-time."

Only when an enterprise has gathered both traditional customer transaction data and customer *interaction* input—including data about service, sales, requests for information, complaints, marketing campaign responses and so on—can it all be analyzed to generate knowledge about customer retention and churn. Such analysis is essential for creating:

- Successful customer treatment strategies
- Ways to optimize marketing campaigns
- Cross- and up-selling

First Union, the U.S.'s sixth largest bank, uses business intelligence software from SAS and MicroStrategy to sift through a 27-terabyte database containing information on 16 million customers to determine which of them are profit generators. Today, the bank has been able to make the majority of those customers profitable, thanks to analytic tools that enable it to match customers with its products and spot cross-sell and up-sell opportunities.

Do you need a data mart?

Conventional wisdom holds that every enterprise needs a central repository for all of this customer information, which comes from many sources—call center, sales force automation, the Web commerce engine clickstream, ERP, points of

sale—so that the right collection of customer data can be queried to get that much-desired 360-degree view of the customer.

A recently emerging alternative—distributed query management—offers a work-around by pulling key selected data from an assortment of heterogeneous sources (data warehouses and/or data marts, operational databases, legacy systems, external data stores) and creating a logical view of it without need of a physical central data store. Thus, historical analysis can be combined with real-time monitoring and alerting.

Still, whatever the means, customer data from a variety of sources has to be integrated—no small feat when the databases from which it's extracted rely on so many disparate platforms and architectures. IDC estimates that, thanks chiefly to the Web and e-commerce, data digitization is growing 100 percent a year, so if customer data is derived from assorted legacy sources, chances are it needs to be cleansed, consolidated and transformed before it can be useful. Gartner estimates that as many as 50 percent of enterprises

laying out a CRM strategy are unaware of the data quality problems they face, and at least 80 percent underestimate the time and resources they'll need.

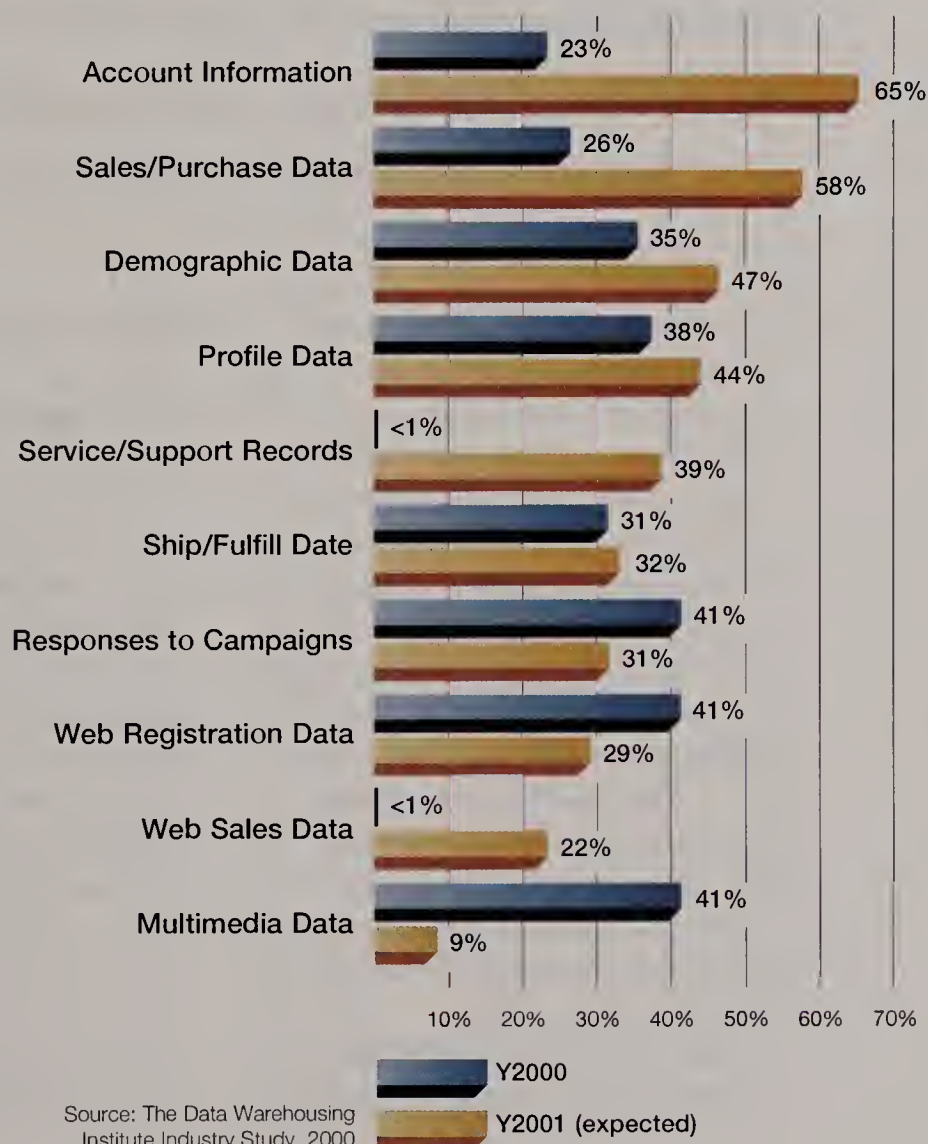
Boosting business intelligence

As one industry analyst puts it, "The risk of not knowing is immense." And, certain-

A Look at CRM Data

Customer Data Collected
Y2000 and Y2001 (expected)

1,600+ Business and IT Executives Surveyed



ly, incomplete or erroneous information can be as harmful as no information at all.

Analytic or business intelligence (BI) applications can help organizations leverage the enormous amounts of data collected everyday—which is, according to Gartner, growing by as much as 100 percent per year—into information and even knowledge. The benefits:

- *Boosting operational efficiencies*, thus lowering long-term storage and data maintenance costs. Example: removing duplication and identifying unique customers, thus eliminating redundant marketing, production and distribution costs
- *Getting an accurate picture of each customer* (including those that are most valuable) in order to tailor interactions and offers and choose optimal sales channels, thus improving customer satisfaction and loyalty and creating the

predicting behaviors of customers

“Companies need to have a good mix of reporting and predictive analytics to support CRM,” maintains Gareth Herschel, senior research analyst with Gartner’s CRM Research practice. “Reporting comes as an integral part of most CRM solutions and is critical to understanding what the enterprise is doing, what impact this is having on customers and their behavior—and therefore what else the enterprise must do to develop stronger, more profitable customer relationships. Data mining is typically used to enable predictive analytics around future customer behavior. This is required when building an understanding of individual customers and is therefore critical to activities such as identifying relevant products and services the customer may be interested in, or identifying which customers may be at risk of churning.”

for delivering on a customer intimacy strategy is real-time, cross-channel personalization,” says Walter Janowski, research director with Gartner’s CRM practice. “To enable it, enterprises must be able to gather information about any customer interaction, at any channel, at the time it occurs. They must also be able to make that information immediately available to all other channel touchpoints so that any additional customer interactions can be appropriately tailored.”

But technologies that enable such real-time personalization remain immature. Janowski advises that real-time, cross-channel personalization should be a long-term strategy.

“Tactically,” he suggests, “enterprises should prioritize their focus on basic personalization techniques such as delivering personalized content or optimizing offer delivery at the channel level first, then grow to integrate those efforts across channels and finally move personalization efforts to function in real-time.”

Analytic or business intelligence (BI) applications can help organizations leverage the enormous amounts of data collected everyday—which is, according to Gartner, growing by as much as 100 percent per year.

- opportunity to enhance relationships
- *Spotting customers who are new* in order to develop the relationship
- *Improving customer retention*; every year, U.S. companies lose an average of 25 percent of their customers
- *Identifying products/services that are most profitable*: find out why a product sells well in one account but not so well in another similar account; spot inventory problems more quickly; determine how in-store placement can boost sales
- *Discovering cross-selling opportunities*
- *Developing advertising and promotions that more effectively target high-yield customers and prospects* while cutting back on low-yield activities
- *Improving the accuracy of and timeliness of sales forecasts* and more effectively

Getting personal in real-time

Increasingly, the effective use of analytic applications depends on an ability to glean insights from customer data in real-time, to use business intelligence collaboratively and to adapt analytic applications to mobile computing.

This distinguishes them from query tools, which enable *ad hoc* analysis of historical data. Both this kind of historical analysis and the predictive insights derived from data mining tools are important because they afford point-in-time comparisons of customer activity—but enterprises employing analytic applications also want ongoing measurement and trending of customer activity, rather than just snapshots.

“One of the critical CRM components

One-to-one marketing: a matter of relevance

But beware what you use to get personal with customers. Not just any profile information can keep them satisfied.

“In theory, these profiles can be used to drive analytics and personalization strategies to enable the creation of customized interaction strategies on an individual basis,” says Janowski. “It’s *relevancy* that leads to value to the customer. An offer or message that addresses a true customer need at the right time and the right place is much more valuable than a webpage that says, ‘Welcome back, Bob.’ True one-to-one personalization is, in essence, segmentation to a segment of one.

“However, this level of segmentation is not necessarily practical or desirable. The number of variables that might be relevant to a customer is finite, even though the total number of possible variables is not. The key to a successful personalization effort is learning to identify and use the variables that are truly relevant,” says Janowski. **SD**

Channeling: Front, Back and Sideways

To be effective, a CRM strategy must integrate every customer-facing activity to establish a consistent "face to the customer" across all of an enterprise's customer touchpoints.

Lacking such integration, customer channels remain isolated stovepipes of customer contact—some over used, some under used—and costly channel conflict becomes inevitable. Even worse, you won't be able to track customer activity and develop the personalized response to them that brings competitive advantage.

"This kind of one-to-one marketing is only possible if you have a good view of your customer and do not have silos of information that can't present a complete view of your customer's needs and history," says Beatriz Infante, CEO of Aspect Communications.

Infante sees personalization across multiple channels growing in value as IP-based interactions allow for multimedia interactions.

"Today, as an example we can all relate to, some financial institutions do a good job of giving customers consistent personalized treatment, whether it's in person at a branch, on the phone or on the Web with self-service. The key word here is *consistency*—consistency of experience across all channels. When increasing levels of personalization are added to that consistency, then the customer experience is better," she says.

Thus, enterprise portals can help organizations get a unified view of the enterprise to customers (as well as employees) in addition to providing a transaction channel.

And customer service and support and CRM applications are getting integrated with corporate websites at an impressive clip, reports IDC. By the end of this year, more than 40 percent of the companies IDC surveyed will have linked customer

service-and-support functionality to their websites, and more than 35 percent will have linked CRM apps and websites.

At the beginning of many CRM efforts, integrating customer-facing activities means injecting IT applications and solutions in places they've never been before, like sales and marketing units, and upgrading the capabilities of customer service and support operations.

Key Aspects of CRM

What Aspect of CRM Is Most Important to You?

360-degree view of the customer	38%
Personalization	21%
One-to-one marketing	15%
Real-time CRM	11%
Automated sales	6%
Electronic CRM	6%
Other	3%

Source: Cutter Consortium,
Survey of 159 Companies

"Increasingly, these solutions provide tools and applications that can be used to respond to customer requests however the customer makes contact—via the phone, direct contact with customer service reps or field workforces, or the Internet," points out Steve Carter, director of marketing and product development at Motorola.

Bringing automation to the sales force

The largest of the CRM applications mar-

kets, sales automation software attracted \$2.6 billion in worldwide enterprise spending last year, reports IDC.

Technology solutions that can help field sales forces include offerings that focus on configuration to help sales people configure and price products and services, contact management, account and lead management and campaign management. Collaborative tools that allow everyone involved in a transaction to interact also have a role to play in sales force automation, and, long term, should be linked with partner relationship management and supply chain management systems.

"Sales automation capabilities, can be broken into two types: those that increase effectiveness and those that increase efficiency," notes Wendy Close, research director with Gartner's CRM practice.

"The *efficiency* components allow a salesperson to focus on more value-added activities like fact-based selling, focusing on increasing customer profitability or identifying new opportunities. However, determining the ROI of sales efficiency capabilities is next to impossible. Nevertheless, the addition of *effectiveness* capabilities translates directly into real ROI in the form of up-sell, cross-sell, close rate and shorter sales cycles," says Close.

Putting the "e" in e-marketing

By injecting information technology into the marketing process, organizations can more effectively place the right mix of product and service offerings in front of each customer at the right time. The effort requires:

- Understanding what customers want and what they do so that offerings can

CUSTOMER RELATIONSHIP MANAGEMENT

be matched to customer interests

- Making a well-timed presentation to the customer
- Measuring the results and feeding these back into an ever-evolving customer knowledgebase

Successful marketing automation entails coordinated marketing efforts across all customer-facing channels and has many components, most of which must not only use customer data from many sources but also interact effectively with each other:

reason to return.

Denmark's largest non-life insurance company, Tryg-Baltica, has 12 million customers who generate some 7 million Internet transactions every month. The firm has implemented a content management system using Siebel software that will reduce its number of customer service centers from 100 to around 30. A one-click button on the Tryg-Baltica website puts a customer in direct contact with a salesperson, which speeds the sales cycle, while offsite salespeople use lap-

Personalization and profiling

Increasingly, anecdotal evidence suggests that online buyers who can find a product at multiple sites will purchase from the one most effective at personalizing content.

Customers using Marriott's Personal Planning Service—which creates itineraries based on requests and preferences created in advance for those who've made hotel reservations—spend an average of \$100 more per day on services, show measurably better scores on satisfaction ratings and are more likely to become repeat customers.

Personalization requires (1) a website navigation structure that adapts to different customer preferences, behaviors and browser requirements and (2) delivering real-time information to human agents so they can customize response in all customer contacts.

Self-service management

Self-service via the Web—by means of search engines, interactive chat, conferencing, "call-me" capabilities, e-mail, browser and application sharing and the like—not only cuts costs for both suppliers and customers, it also creates new kinds of opportunities to engage customers and make relationships more valuable.

Customers can more easily resolve problems and answer questions, access account and service histories, interact with call center agents in real time, and receive assisted service through a personalized portal. With integration, self-service applications can make other customer channels—such as the telephone, e-mail and fax—more efficient, too.

"Consider the number of customers frustrated by long or nonresponsive applications, or those who want an immediate quote, even at 2:30 a.m.," suggests Carlos Galarce, senior vice president, Information Office, APAC Customer Services, Inc. "These customers prefer the advantages of self-service availability but often click to a competitor unless they get additional assistance."

Privacy, security & CRM

It may be worth thinking out of the box to prevent a clashing of two key trends—the intensifying gathering of customer information and building concerns about customer privacy.

Certainly, there are reasons to care about what data is gathered and how it's treated. One issue is that privacy is getting some legal clout: The Gramm-Leach-Bliley Act requires that financial institutions disclose privacy policies regarding sharing of information about individuals.

Another challenge is the customer data itself: How reliable is it, especially when it comes to the more intimate details?

Permission-based, or opt-in marketing is one way to respect individuals' privacy. Individuals express interest in a topic and volunteer information about themselves, which can be more cost-effective than creating prospect lists using traditional mass-marketing methods.

Adsertor marketing—which acknowledges that customers own their names as well as the demographic, financial and marketing information associated with their names—offers yet another way to improve the accuracy and completeness of customer information while respecting their privacy. Because each individual owns his or her name and name-related information, that individual decides what marketing materials to receive. Which means that the marketing they do allow into their lives is much more likely to convert them from prospect to purchaser.

Content management

Integrated CRM creates opportunity for automatic gathering, versioning, testing and deploying vast amounts of Web content, reducing website costs and shortening management cycles.

The importance of content is hard to underestimate. A September research report by Jupiter Media Metrix notes that 59 percent of those surveyed said they returned to a website because of increased product information. Another 26 percent cited fast-loading pages as a

top with broadband links to access customer profiles that enable them to quickly close deals. And automobile claims adjustment processing times have plummeted.

E-mail management

Although the chief channel of communication with customers remains field sales forces, the Web and e-mail are becoming very important, and customer e-mail traffic is exploding, challenging enterprises to keep response times within acceptable limits.

A leading TV shopping network, Shop At Home, concluded that sales could be higher if its ordering process was smoother. The company installed Aspect Communications' Contact Server, which blends all customer contacts into a single view for the rep, along with Aspect's Customer Self Service. Now agents can recognize incoming customers' phone numbers and route them immediately to the self-service system where customers simply plug in the number of the item they want. These days, Shop At Home pulls down \$100,000 a day just in self-service sales, and the percentage of customers choosing the self-service option has more than tripled, accounting for 10 percent of Shop At Home's call volume.

Workflow management

Customer-facing activities—like campaign execution, lead management, contest management, trade show management, marketing collateral management and more—need to be rigorously coordinated across multiple channels and staff. To personalize service reps' contacts with customers, ensuring that the right offers are presented at the right time while keeping interactions consistent, scripts must be developed in near real-time.

E-CRM

E-CRM—which Accenture describes as using electronic channels to market, sell and serve customers, either directly or via channel partners—can boost profits by enabling enterprises to:

- Share information with customers and business partners; this is especially valuable for companies selling complex and customized products and services
- Configure products/services online, thus reducing invalid orders and returns
- Take orders over the Internet
- Complete transactions through electronic bill payment

Perhaps the two greatest challenges posed by e-CRM are (1) integrating various electronic customer channels with more traditional ones (so that, for instance,

the sales force knows when a customer orders something online) and (2) gathering, massaging and sharing customer data so such integration is effective and customer interactions are more profitable.

As companies get closer to achieving their early CRM goals, it becomes clear that real-time collection, analysis and distribution of customer data is crucial. As face-to-face interactions with customers decline, it's essential to analyze customer e-interactions in real-time to spot key success factors and ensure that marketing strategies and messages are appropriate.

From call center to customer portal

Customer demand for 24/7 availability and response is forcing enterprises to develop CRM strategies that include integrated contact centers, Internet chat sessions with customers and collaborative co-browsing.

Multichannel contact centers can cut customer rep staffing requirements, since customers can use the Web to find answers to their questions and reps can handle more Web-originated inquiries because they're not required to interact in real-time.

Or they can keep staffing needs from exploding as customer service operations expand rather than shrink and as customer reps' jobs become more demanding than ever: In addition to telephone skills, reps now need to be computer-literate and good at letter-writing. The International Customer Service Association (ICSA) reports that in 2000, handling an average e-mail or Web inquiry was less costly, at \$4.32, than handling a customer phone call, at \$5.13.

For large enterprises and government agencies, specialized contact center applications can ease the complexity for customers and citizens alike. The City of Chicago uses SunTRACK from Suncoast Scientific, a Motorola company, to track and manage service requests received by mail, phone or fax.

"Making sure that your people who respond to service requests have the capa-

bility to adapt their business processes to evolving customer requirements is where technology comes into play," notes Motorola's Carter.

Contact center savings are starting to show up where it counts—on the bottom line. Saks Inc., which runs more than 350 stores under 10 different brand names, is banking over \$1 million annually in payroll reductions since implementing Aspect Communications' Customer Relationship Portal to handle customer inquiries. The portal's more precise routing of phone calls, faxes, e-mails and Web inquiries has reduced the average "speed of answer" from 45 seconds to under eight seconds.

Well-run contact centers can help the top line too.

"One of the most important things companies can do is look at the contact center as a profit center," says Aspect's Infante. "By reducing customer churn by as little as 5 percent, businesses can see an uptick in revenue upwards of 25 percent."

Canadian Tire Acceptance Ltd. not only serves the needs of four million credit card customers, it also acts as the primary call center for parent company Canadian Tire, the largest retailer of hard-goods in Canada. After turning to Chordiant Software for help in handling the 15 million calls that come in every year, the company has increased the number of calls handled by 10 percent, improved customer retention rates and customer satisfaction, and boosted revenues. Moreover, customer rep training time has been cut, fewer calls need to be escalated and the need to build additional databases has been eliminated.

"A company's first contact with its customers is defined through its customer service organization," Infante points out. "Therefore, it is essential that all customer contact—whether telephone, fax, e-mail, Web chat or wireless—is consolidated in a single location. By providing agents with a single view of a customer, their history and their likes and dislikes, businesses can prove that the customer matters."

What about wireless?

After an excess of hype, it's easy to wonder about who's going to use wireless e-CRM. The near-term answer: employees, notably sales and field service people.

"The ability to deploy CRM applications via wireless devices is key to 'completing the loop' of customer service," says Carter. "It enables the field workforce to access key customer information on demand and, where possible, be proactive in reporting problems. Wireless devices available today and in the near future can deliver CRM data to field workforces at significant cost savings using one- and two-way pagers, low-cost handhelds and the soon-to-be-released Java appliances targeted at single-application mobile devices."

Consider FedEx Corp., which has been using wireless e-CRM applications for close to 20 years. FedEx drivers scan pickups using a handheld scanner, then put the scanner into a docking station in their

trucks, which sends package data to the company's Memphis headquarters and, virtually instantaneously, publishes the information to all customer touch-points—including the Web, call centers and WAP-enabled applications. Mobile customers can track shipments using Microsoft CE devices or Palm computers equipped with AvantGo's software and Mobile Internet Service.

Where can wireless e-CRM work in your company? Wherever there's a problem because critical real-time information needs to get to those who are beyond the reach of wired systems.

"Mobile applications should be heavily oriented toward personalization with mechanisms that permit the main Web application to extend to mobile-based on-event monitoring and other alerting mechanisms," advises Beth Eisenfeld, research director with Gartner's CRM practice.

"Good mobile applications must also

stand above all other choices for conducting any transactions," she adds. "They must be selected based upon whether time-criticality of information or convenient access to information are at the core. Otherwise, users will forego the inconvenience of using a mobile device and wait until they return home or to the office to use their PCs. Another item often forgotten is the latency of the network. Developers and business executives think that wireless means fast—but if network latency issues are not addressed, latency can kill use. A general thought is that while PCs tolerate 30-second turnaround, mobile can only tolerate three seconds."

Linking CRM, ERP, SCM and partner relationship management

Companies that integrate partners and suppliers into sales, marketing and service processes can close deals faster, capitalize on more marketing opportunities and pro-

City of Baltimore Transitions to Motorola's ASP-Deployed Customer Service Request™ System

The City of Baltimore recently marked a key deployment milestone for its citywide Community Connection Customer Service Request™ (CSR) System, "CitiTrack", successfully transiting operations and management responsibilities for the system to Motorola using an Application Service Provider (ASP) deployment model.

A companion to Baltimore Mayor Martin O'Malley's acclaimed "CitiStat" real-time performance management tool, CSR enables government entities to manage the intake, routing, resolution and reporting of citizens' requests for services. The system, which will be configured for use by all city departments, provides information to citizens, tracks service requests and assigns work crews to efficiently resolve service requests. Baltimore citizens can ask for services by telephone, mail, e-mail or in person, and department personnel and elected officials can track and report on service request resolution status.

According to Elliot Schlanger, Baltimore's chief information officer, an ASP-deployed CitiTrack system was the ideal solution for the City of Baltimore for two reasons.

"First, CitiTrack solves our problem of how to handle citizens' requests for services efficiently and effectively through one enterprisewide system," he explains, "and second, the ASP deployment and management model guarantees world-class performance and availability characteristics without overloading our IT staff."

ASP Deployment Provides Best of Both Worlds

Taking advantage of best-in-class architecture elements to ensure a technically superior solution, the ASP-hosted CSR solution requires nominal up-front capital investment with predictable monthly costs, minimizes impact on customer IT operations, and provides for inclusive, fast implementation and upgrades to CSR application and infrastructure.

Moreover, to make certain the application meets the demands of a city that operates around the clock, Motorola conducts 24/7 proactive monitoring of transaction response times, server utilization and other key performance attributes. And Motorola's capacity-on-demand configuration allows the system to grow as the City of Baltimore's demand for additional users grows.

"Motorola's ASP deployment provided us the best of both worlds: a technically superior solution that guarantees performance and eliminates technology obsolescence, without significantly impacting our existing IT operations," says Schlanger.

For more information, please visit www.motorola.com. For more information on the Customer Service Request™ product for public sector entities and the ASP deployment model, please visit www.motorola.com/statelocalgov.

vide more seamless customer service. The entire partner lifecycle—recruitment, registration, profiling, certification, execution, measurement and analysis—can be leveraged by technologies. But should it be?

“The answer,” says Ed Thompson, Gartner vice president, “depends on the enterprise deploying the technology and the industry in which it operates. A pharmaceutical company implementing sales force automation has very little need of back-office integration since the sales person is often the primary point of contact, call center functionality is rarely used, orders are not taken and there’s no need to look at inventory levels. Contrast this with a chemicals salesperson who wants to promise delivery of products based on supply chain information rather than what are only post-production inventory levels. The salesperson in this case *does* take orders and accesses back-office functionality on a daily basis. So CIOs contemplating this kind of linkage have to consider: Are there any benefits from process-level integration from the front- to the back-office and back again?”

For those organizations with a competitive need to respond to these pressures but which lack the technical depth to do it in-house, service providers will be picking up the slack. By 2005, predicts IDC, companies worldwide will be spending more than \$40 billion a year on supply chain management services alone, up from \$12 billion last year.

That’s because inter-enterprise integration triggers big changes in how business is done. For instance, business goals and many corporate processes will have to be redesigned. Risk management techniques will need to replace zero-breach access and security strategies, since collaborative commerce requires trust and a willingness to share information among all members of a supply chain to enable faster and more effective response to customer demands.

Customer-centricity is key

“That happens when you put customers at the center of your business and employees understand how their func-

When is it time to outsource?

For many CIOs faced with serious budget constraints and cautious ROI strategies, implementing even pieces of an enterprise application like CRM can be nearly impossible to do well. If the complexity of CRM technologies and processes are not adequately addressed—with sufficient CRM expertise as well as an ability to commit to interdepartmental coordination and integration with the existing and legacy IT infrastructure—potential benefits are forsaken.

These kinds of problems have led many firms to turn to outside service providers for help implementing CRM initiatives. According to recent Gartner research, 58 percent of companies surveyed used external services, and Gartner expects that number to climb dramatically.

It’s not hard to see why. A global auction house that hired customer service specialist APAC Customer Services, Inc., saw a 60 percent drop in the average handling time for escalated calls and a 70 percent drop in turnaround time. APAC estimates that, compared with internally developed solutions, implementing its e.PAC hosted solution in a 50-seat center saves each of its clients about \$1.5 million in direct CRM costs over a five-year period.

“Companies should consider outsourcing technology development,” observes Carlos Galarce, senior vice president of APAC’s Information Office, “when they have no proven success in enterprisewide CRM integration, limited capital resources, high customer demands for quality services, or a need to increase revenue and/or realize greater revenue.”

Galarce believes companies should look at full customer contact outsourcing “when they’re unable to designate the management resources to a CRM incubation process or when they have limited capacity and data scalability.”

tions interact with all the other functions in order to achieve revenue,” believes Aspect’s Infante. “In our company, we’re directly linking sales and service to product marketing and product management so customer issues can be resolved quickly, sales cycles shortened and customer satisfaction heightened.

“The one key product companies will

need to pull this off is a contact server which provides a solid business communications platform. The contact server should have visual workflow development capabilities because businesses will need to rapidly and constantly change rules for handling interactions and transaction within the company and with the outside as well,” says Infante. **SD**

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Continued from Page 114

boundaries. Even in cases where data sharing makes sense, it is often prohibited. To keep from stepping on a privacy land mine, it's critical that state CIOs develop ironclad policies on which data may and may not be shared by which agencies, communicate those policies to all vendors and consultants involved in a CRM project, and frequently follow up to make sure the policies are being followed, says New Jersey's CIO Wendy Rayner.

FIND EARLY ADOPTERS

Despite the formidable challenges, states are deploying CRM. As in the private sector, it makes sense to start small, rather than try to impose CRM on all state agencies in one fell swoop. Successful CIOs identify groups that are ripe for CRM and outline the potential benefits for the heads of those agencies. Once the agency heads buy in, a pilot program can be launched on a manageable scale.

The key, state CIOs say, is to seek departments that are eager to modernize. In Kentucky, until 1999, the Department of Employment Services, which tracks whether employers have paid their unemployment insurance taxes from Kentucky employers, ran parallel with the state's Revenue Cabinet, according to Larry Moore, the employment agency's project manager for the electronic workplace. "We replicated all the [Revenue Cabinet's] functions," he says, which meant employers had to file the same information with both agencies. When the Revenue Cabinet installed a new tax-collection system, Employment Services did away with its duplicate system, outsourcing its tax and remittance processing to the Revenue

Cabinet as part of a CRM project that included the installation of Siebel Systems software. "Ninety-thousand employer reports went away," Moore says. The project saves his agency at least \$1 million a year in implementation costs.

PROVE CRM WITH PORTALS

Until this summer, the Florida Department of Business and Professional Regulation, which issues about 1 million licenses to everyone from barbers to accountants, ran a witches' brew of 17 different licensing systems. Applicants faced an average review time of 45 days under a paper-intensive process. A single mistake on a form meant many days lost as that form was mailed back to the applicant, corrected and returned. And most applicants make mistakes.

On July 1, Florida, with help from Accenture, inaugurated a Versa CRM system intended to streamline the licensing process. The 17 databases were merged into a single Web portal and linked to new call center software from Siebel. Now professionals and business owners can get questions answered quickly at the call center via e-mail, telephone or online chat and, most important, find out immediately whether they've made a mistake in their online application. Early reviews of the licensing system are promising. Average wait time for an online approval for a renewal, according to a state official who worked on the project, is now less than five minutes. In 2002, Florida plans to expand the program to other types of licensing, including those done through the Department of Health, says the official, who refused to be identified for this article. (Former Florida CIO Roy Cales, who was interviewed for this story,



New Jersey CIO Wendy Rayner has a team of six who sell the benefits of CRM to reluctant state agencies.

resigned in August after he was charged with allegedly forging a client's signature to obtain a 1996 loan for his now-defunct software company. Cales denies the charges, says his lawyer, Stephen S. Dobson, and has cooperated with investigators. At press time, the case was in the pretrial discovery stage.)

Portals like Florida's are good first steps for states to take toward CRM because the information needed to create them already exists; it's scattered all over state websites. For Florida, building the licensing portal was made easier by the fact that one agency owned all the data. Securing cooperation

AS in the private sector, it makes sense to start small, rather than impose CRM on all state agencies in one fell swoop.



Portals are good first steps for states to take because the information to create them already exists.

that CRM software can bring.

Last year, Rayner created a CRM unit composed of six customer relationship managers, who serve as liaisons to state agencies. She credits the unit with building support for the state's initial CRM projects, including a portal for small businesses. Previously, Rayner says, business owners had to visit 10 or 12 agencies to secure all necessary permits and licenses.

GET CITIZEN FEEDBACK

California is using CRM to speed up the enrollment of children from low-income families in a state-sponsored health-insurance program. One key to success in this case was the small pilot project the state did to ensure citizens would use the system. "We're rolling out systems that are small in scope but scalable," says Arun Baheti, the state's director of e-government. "We did it this way to check the systems and make sure the customers wanted it."

The application form for the Healthy Families program once ran more than 20 pages. Between mailing in the form and then correcting any errors they made, families could wait more than two months before their enrollment was finalized, according to Baheti. Now applicants can go to a local state government office, apply online with assistance from a case worker and find out within minutes if their application is accepted. If it is, their information is entered into a database that case-workers can access before they have their first meeting with their clients.

The system, which uses CRM software from EDS and Deloitte and Touche was tested on a small

scale in San Diego County this spring. When it was clear Healthy Families applicants liked the speedier access to benefits, Gov. Gray Davis approved a statewide rollout of the system.

Healthy Families' deployment strategy reflects a broader effort to involve citizens in projects to improve government service delivery. "[Davis] said he wanted [state government] more customer-centric," Baheti says. "That's the driver for us. Downstream, CRM may result in cost savings—but that's not the primary driver for California." Last year, the state formed the Governor's Web Council, composed of representatives from the public and private sectors. The council is seeking citizen feedback as agencies roll out new CRM initiatives, using focus groups to gauge interest in proposed programs as well as their privacy concerns.

THE OUTLOOK

It's one thing, however, to launch a pilot program with a strong, public push from the governor; it's another to sustain the momentum amid economic downturns, political leaders' changing priorities and entrenched bureaucrats.

Nevertheless, state CIOs think CRM is close to gaining critical mass. Citizens accustomed to seamless service in the private sector won't stand for less in the public sector. And if there's one thing a politician can figure out, it's what taxpayers are clamoring for. **CIO**

How do you think CRM can improve government services? Send Senior Editor Elana Varon your ideas at evaron@cio.com. Southborough, Mass.-based Freelance Writer Steve Ulfelder can be reached at sulfelder@charter.net.

when multiple agencies are involved is a major hurdle for state CIOs. New Jersey's Rayner says that agencies fear sharing data with each other because they have traditionally operated as separate fiefdoms. Rayner coaxes agencies into sharing data over the course of several meetings—helping them overcome their institutional tendency to jealously guard their information. Often, Rayner and other state CIOs say, the key persuader for agencies is the reduction in call center traffic—and associated expenses—

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Align Thyself

When Gartner's CIO called attention to the company's misalignment, it was a case of the emperor's new clothes. Here's a candid look at where Gartner's been and where it's heading. BY MARC FERRANTI

Gartner, one of the world's most influential information technology research and consulting companies, makes its living dispensing advice on technology, strategy and business-IT alignment. So it is profoundly ironic that the company recently faced its own misalignment woes. During the late 1990s, the Stamford, Conn.-based consultancy suffered from a chronic lack of communication between its IT department and its far-flung business units. That disconnect cost the company millions of dollars every year, in the estimation of its own CIO and other observers.

These troubles were exacerbated by a no-holds-barred acquisition strategy that went awry in the dust of the dotcom bust last

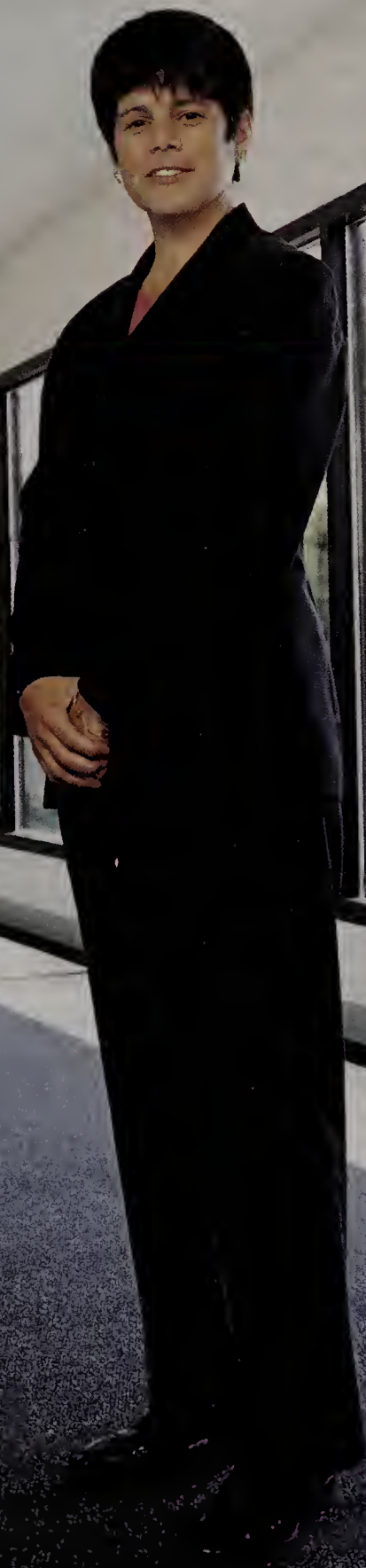
spring. Like some of its clients, Gartner saw its market valuation and share price drop, and it had to sell off and take a loss on some of what it swallowed during the boom-time feeding frenzy. The company is now applying its own advice internally and using the lessons it learned in restoring alignment between its own IT department and its business side to meet the recession-time challenges of restoring investor confidence and bolstering its bread-and-butter research revenue.

Here is the story of how Gartner dug itself into a hole and how it is digging out.

Reader ROI

- Learn how a prominent analyst firm recognized its own alignment problems
- Understand the processes it developed to recover strategic alignment
- Get a behind-the-scenes look at the IT operations of the über-analysts

**CIO Bart Stanco and
CFO Regina Paolillo
joined forces and applied
Gartner's gospel of
alignment to themselves.**



DIGGING THE HOLE: WHO'S IN CHARGE HERE?

Gartner CIO Bart Stanco took the job in the spring of 1999 at the height of the dotcom boom. At that point, the IT department had no system to determine which projects would best support the company's strategy. "There were multiple projects for the same function, projects at cross-purposes," Stanco says. "We found that we were working on too many of the wrong things."

For example, when Stanco took the reins, Gartner had two teams working on two projects, both intended to support pricing structures for research services. One group was developing a software tool to customize research and prices for individual clients' needs. The other group was working on systems to streamline pricing by offering the entire array of research on a per-user basis.

Stanco worked with Gartner executives to pull the plug on the project to tailor individual offerings and adopt a new community-based pricing scheme. This method took the latter approach—providing a client with the complete menu of Gartner research services. However, those changes were made only after Gartner had wasted months working on both projects with approximately 50 staff members and consultants, Stanco says. With costs of around \$1,500 per day for each outside IT consultant, that kind of effort easily added up to \$1 million a month.

GARTNER INC.

FOUNDED: 1979

HEADQUARTERS: Stamford, Conn., with 80 locations worldwide

BUSINESS UNITS: Gartner Research, Gartner Consulting, Gartner Events, Gartner Measurement

IPO: 1993, listed on the NYSE (symbol: IT); More than 30 acquisitions since going public

REVENUE: \$975 million (forecast for fiscal year 2001)

I.T. STAFF: 300 with supporting personnel in 50 countries (4,600 employees worldwide, including 1,400 research analysts and consultants)



"There were multiple projects for the same function, projects at cross-purposes. We were working on too many of the wrong things." —Bart Stanco

Lack of communication among IT groups and Gartner's worldwide business units also caused the company to miss opportunities to cut costs. For example, nearly 80 percent of the company's 4,600-member workforce uses laptops, but there was no centralized purchasing process as there is now. The cost of extra support and missed opportunities for volume pricing came to more than \$8 million a year, estimates Stanco.

Another troubling symptom of Gartner's misalignment was poor morale among staff and executives at all levels that was generated by an almost complete lack of communication. "You and the person you were working with in [IT] didn't know for sure whether anyone in the company was thinking about anything similar to what you were thinking about," says Moira Collins, senior vice president of worldwide marketing.

The project-decision processes and budget prioritization were a mystery. In the absence of a clearly understood decision-making

process, employees often ascribed obscure motives to any project approval decision. "It began to look more like a political decision than a good business decision," Collins says.

DIGGING THE HOLE, PART II: TRYING TO HAVE IT ALL

Gartner's aggressive acquisition strategy strained the company further. Since it went public in 1993, Gartner has acquired or made significant investments in 30 companies, including Inteco, the Internet research and advisory service formerly based in Norwalk, Conn., and San Jose, Calif.-based market research company Dataquest. "We were on a course to diversify the company's product line to gain market share, and over the long run that would give us greater sustained profitability," says Gartner CFO Regina Paolillo.

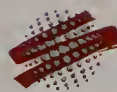
Competitors like Cambridge, Mass.-based Forrester Research were growing faster than Gartner, partly by jumping on the Internet

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Advise and Align

The three-tiered advisory council is the heart of Gartner's project-based budgeting system

THE THREE LEVELS OF GARTNER'S project-based budgeting process are defined by the cost and scope of the projects under consideration.

The DART (Dollars, Area of impact, Resources, Time) process is the first-level council for projects limited in scope to under \$100,000 and affecting one business unit. Business unit leaders and their IS counterparts discuss the proposal merits and have the power to green-light them.

The TEB (Technology Enabled Business) Council evaluates projects of more than \$100,000 in value that affect more than one business unit or require intensive use of resources. Representatives from approximately 15 business units, partners from IS, Gartner CIO Bart Stanco, and often up to 10 or 12 representatives from global business units meet twice a month.

The Capital Investment Council reviews projects valued at more than \$500,000, or any other project at Stanco's discretion. This tier of the council includes Stanco, CFO Regina Paolillo, a business development representative and a senior business unit representative from outside the United States.

-M.F.

bandwagon, notes Sandra Notardonato, an analyst with Boston-based investment company Adams, Harkness & Hill. "Whether they liked it or not, Gartner became known as the 'Y2K shop,' while competitors became known for tackling the Internet and tomorrow's technology," she says.

Integrating the numerous acquisitions that resulted from Gartner's diversification strategy was a challenge. "You want to integrate the offerings and drive efficiencies, integrate billing and sales, check security, integrate infrastructure, and ultimately as a research organization you want to take the knowledge you've acquired and plug it into the company's intellectual capital," Stanco says. When a company has existing alignment problems, though, that's tough to do, he acknowledges.

The duplication of effort and projects at cross-purposes, to which Stanco refers, were not only a symptom of existing misalignment during this expansion but also an indication that miscommunication may have impaired Gartner's ability to make sound, strategic acquisition decisions. To catch up in the Internet space, Gartner bought the Tech-

Republic professional IT services and news website in March 2000. The decision was questioned by observers and ultimately undermined by its timing. While TechRepublic's content was within Gartner's realm of expertise, its business model was not. As a research and consulting company, Gartner had no expertise in fostering a revenue stream by selling online advertising.

In the downturn that followed the acquisition, it would have taken years to realize TechRepublic's revenue potential. Gartner ended up selling it for \$23 million in April, after buying it for \$80 million and sinking \$50 million into the site for maintenance and updates, thus losing about \$107 million on the deal. A few weeks after that, Gartner experienced a slump in share price—which dropped from about \$18 in March 2000 to about \$6 a year later—that kicked off a conversion provision for the \$300 million bond Gartner had used to help fund its aggressive expansion strategy. As a result, bond issuer Silver Lake Partners became a 36 percent owner of Gartner, diluting the value of other investors' shares. Sources familiar with the company's plans say Gartner was also in

talks to be acquired by Reuters, but its offer price was too low.

"Investors are a little unhappy," CFO Paolillo acknowledges. "Where we wandered off the farm was to say we were gonna get into the Internet space."

DIGGING OUT: BETTER BUDGETING

Though Gartner's alignment problems were exacerbated by acquisitions, they had other roots as well, according to Stanco. Gartner is organized geographically, with different executives responsible for different countries and regions and different functional units. That makes communication and enterprise-level thinking a challenge.

To spark communication between IT and the business units at Gartner and get them thinking about companywide strategy, Stanco introduced elements of what he would later call project-based budgeting. The project-based budgeting process consists of a three-tier advisory council in which IT and business-unit leaders from around the world participate in the project planning process. There's also a formal proposal system requiring project sponsors to tie project goals to corporate strategy, prioritize projects based on criteria derived from corporate goals, and generate a return on investment and total cost of ownership analysis after launching projects. Paolillo and Stanco both point to the GBIS, or Gartner Business Information System, an analysis program designed to help managers control profit and loss, as an example of a new tool developed using Stanco's project-based budgeting methodology.

One of Stanco's first steps toward establishing that process was to appoint strategic business partners (SBPs) from the IT side to each business unit and establish a review process to vet and approve projects under \$100,000 that are limited to one business unit. The SBPs and business unit leaders discuss project merits and have the power to give them the green light. By summer 2000, in time for fiscal 2001 budget planning, a three-tier advisory council was in place. This hierarchy included a council for larger proj-

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Gartner's project-based budgeting process has helped the company "close the gaps" between IT and the business units, says Regina Paolillo.

ects that assembled senior business and IT managers from around the world (see "Advise and Align," Page 138).

To ensure that project proposals are tied to company strategy, the lead project sponsor, who can be from IT or a business unit, fills out planning templates that identify the goal the project is supposed to facilitate. One of the advisory council members then prioritizes the project in a "stack ranking," using criteria weighted according to the relative importance of the project goals. For example, since growing research revenue and profitability are paramount, those projects will end up on top of the stack.

A key component of this methodology is its flexibility, says Paolillo. If the company needs to reconsider strategic and corporate priorities midyear, then the top-level advisory council can rework stack rankings and reprioritize projects using a new or reweighted set of criteria.

DIGGING OUT, PART II: GETTING ALIGNED

Project-based budgeting was derived in part from Gartner's own consulting and research advice, applying what Stanco calls "Gartner at Gartner." For example, Gartner has long stressed the necessity of an ROI analysis after launching a project—something the IS de-

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To read more about **ALIGNMENT** and how to achieve it, check out last year's Closing the Gap special issue at www.cio.com/printlinks.

partment now does religiously as an integrated part of the project-based budgeting process. The planning templates used in these analyses ask the types of questions espoused by Gartner's "IT value scorecards," which are used to align IT and business.

Though applying Gartner's consulting advice to itself may seem obvious in retrospect, some of the initiatives met with resistance. For example, the advisory councils "took a little time to get traction," says Mike Zboray, chief technical officer and a former analyst. Stanco's proposal to establish these councils goes beyond the types of projects and proposals usually expected of IS.

To ease cultural issues, Stanco and his team strove to earn the confidence of the business units by continuing to take care of the basics, such as running the database center and help desk, managing the desktops and telecommunications—what Paolillo calls "right-to-life" issues.

Still, Stanco felt a key challenge in his efforts to become a partner with the business side of the house was articulating a vision that would help drive the IT alignment mission from the CEO and CIO all the way down to department managers.

With that in mind, Stanco enlisted Hunter Muller, who runs professional management company Hunter Management Group in Westport, Conn., to help spell out the principles behind the criteria Gartner now uses to prioritize projects. Those principals are as follows: The IT department should deliver a competitive advantage to increase shareholder value; it should form a partnership with the business side to focus on creating value, increasing efficiencies and reducing costs; and it should focus on organizational development of people, process and technology.

The project-based budgeting methodology has made an amazing difference, says Paolillo. "What it's done is helped close the gaps, not just between corporate services and business units but between the business units themselves." By bringing those groups together, Stanco and Paolillo hope to have made Gartner's misalignment woes a thing of the past. **CIO**

Got an alignment story to share? E-mail it to us at letters@cio.com. Marc Ferranti is executive news editor for the IDG News Service. Reach him at marc_ferranti@idg.com.



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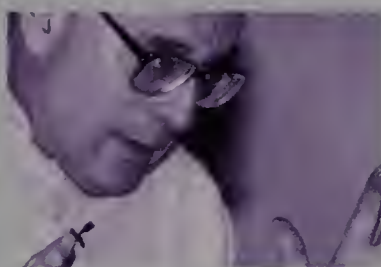
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Agenda



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8:00 AM – 1:30 PM

Partners Golf Tournament

Enjoy a round of golf on the Ventana Canyon Course

3:00 PM – 6:00 PM

Registration

8:00 PM – 9:30 PM

Partners Café Reception

Meet and network with other participants, Award Winners and Retreat Partners in our informal networking lounge.

MONDAY, JANUARY 28

7:30 AM – 8:30 AM

Registration and Breakfast

8:30 AM – 9:00 AM

Opening Remarks and Retreat Welcome

ABBIE LUNDBERG
Editor in Chief, CIO Magazine
What is Value? Lundberg explains how the decisions and

deliberations of the Enterprise Value Awards judges reflect a shift in the IT value proposition — and what it means for businesses today.

9:00 AM – 10:30 AM

Retreat Introduction and Welcome Address: The Internet-Transformed Organization

F. WARREN MCFARLAN,
Senior Associate Dean, Director of External Relations, Albert H. Gordon Professor of Business Administration, Harvard Business School
In the aftermath of the attacks, Y2K and the dotcom debacle, both CIOs and general managers might be forgiven for thinking that things would be moving at a less hectic pace in the IT world. In fact, exactly the opposite is true as the Internet, intranets and extranets are deeply impacting the operations and competi-

tive positioning of most major corporations. The critical question has become whether to be a fast adopter or a cautious follower. Different firms have followed both strategies, with great success. This work is taking place on a global scale with the impact the same in Dallas as in Hong Kong. The core of this Retreat will be built around one of the largest (and explosively growing) credit card providers in the U.S.

10:30 AM – 10:45 AM

Enterprise Value Award Winner Presentation

10:55 AM – 11:25 AM

Mid-Morning Break

11:35 AM – 12:35 PM

Will Computers Become People in 30 Years?

JARON LANIER, *Lead Scientist, National Tele-immersion*

Initiative; *Chief Scientist, Eyematic Interfaces*

We are used to hearing claims that when computers become a million times more powerful in about 30 years, they will become equivalent to humans or greater than humans. In order to examine whether this might be true, we must rethink a range of questions such as: "Why did evolution take so long?" and "Why is contemporary software so unreliable?"

12:35 PM – 12:50 PM

Enterprise Value Award Winner Presentation

12:50 PM – 2:00 PM

Luncheon

2:00 PM – 2:45 PM

Industry Briefings

2:50 PM – 3:35 PM

Industry Briefings

To enroll or for more information, call 800 355-0246, fax the form to 508 879-7720, or visit our website at www.cio.com/conferences

3:45 PM – 4:15 PM

Coffee Break

4:25 PM – 5:10 PM

Special Presentation on Security and Privacy

CIO, in conjunction with the U.S. Department of Commerce's Critical Infrastructure Assurance Office, hosts a special presentation on security and privacy issues.

5:10 PM – 5:40 PM

Global Industry Value-Chain Restructuring

F. WARREN MCFARLAN

Every aspect of the industry value chain is potentially transformed by IT. Inbound logistics, outbound logistics, sales and infrastructure all operate in an entirely different way in this new world.

Organizations are rethinking their core competencies to decide what they wish to keep inside the boundaries of the company, and what they choose to delegate to

others for execution. This realigning of what lies inside/outside the corporation is one of the deep, IT-enabled transformations of the early 21st century.

5:45 PM – 6:45 PM

Partners Café Reception

Catch up with other participants in our informal lounge, share ideas and experiences.

7:00 PM – Midnight

Partner Hospitalitys

TUESDAY, JANUARY 29

7:30 AM – 8:30 AM

Breakfast

8:30 AM – 8:45 AM

Corporate IT Spending Trends — Where are They Headed?

GARY BEACH

Group Publisher, CXO Media Inc.

Every month for the past year and a half *CIO Magazine*, in partnership with Ed Yardeni, chief investment strategist of Deutsche Banc Alex.Brown, has surveyed a panel of senior executives on current and future IT spending and other issues. Beach presents an overview of the latest results and emerging trends from the *CIO Tech Poll*.

8:45 AM – 9:00 AM

Enterprise Value Award Winner Presentation

9:00 AM – 10:00 AM

E-Commerce Management

F. WARREN MCFARLAN

Even as the world of B2B exchanges has fallen apart, the challenges and economic opportunities implicit in implementing B2B links and B2C links are moving forward rapidly (the bottom line contribution can be enormous). Two very different industries are looked at; one is the world of B2B evolution in the telecommunications industry and the extraordinary new standards of support that have been established; the other captures the major repositioning of various players in the financial services industry. This battle consumes the attention of everyone from the CEO to the CIO in trying to get it right.

10:00 AM – 10:15 AM

Enterprise Value Award Winner Presentation

10:25 AM – 10:55 AM

Mid-Morning Break

11:00 AM – 11:45 AM

Industry Briefings

11:55 AM – 12:10 PM

Enterprise Value Award Winner Presentation

12:10 PM – 12:55 PM

Globalization

F. WARREN MCFARLAN

Almost unimaginably, technologies have spread out across the globe and provided fundamentally new ways of distributing work and linking organizations together. The special challenges posed by certain environments, such as China and India, are dealt with. It is a vastly shrunken global arena that we are dealing with today.

1:00 PM – 3:45 PM

Luncheon and Case Study Workgroups

3:45 PM – 5:45 PM

Informal Networking and Recreation

5:45 PM – 6:45 PM

Enterprise Value Awards Reception

7:00 PM – 9:30 PM

Enterprise Value Awards Dinner and Ceremony

Come raise a glass and toast the winners at our black tie dinner and ceremony, proudly underwritten by Genuity.

9:30 PM – 11:30 PM

Dessert Reception Hosted by Genuity

Cap off the evening with a special post-awards reception.

WEDNESDAY, JANUARY 30

7:30 AM – 8:30 AM

Breakfast

8:30 AM – 10:30 AM

Case Study Workgroup Presentations and Discussion

10:30 AM – 10:45 AM

Mid-Morning Break

10:45 AM – 11:30 AM

Reflection

F. WARREN MCFARLAN

The Retreat closes with a discussion of the specific management practices currently in use by leading adapters to the new information age.

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☐ Sales/Marketing/Consulting \$10,000

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Emerging technology

INNOVATION and PRODUCTS in the VANGUARD

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Strong Java

*Despite Microsoft's best efforts, Java is well-established in the enterprise.
Can it hold its ground?* BY D.F. TWENEY

*Edited by Christopher
Lindquist. Send your
thoughts and ideas
for future columns to
et@cio.com.*

THIS YEAR, the programming language-cum-development platform called Java turned 5. It now stands as one of the world's most popular computer languages—and it continues to grow. The number of Java programmers is increasing

by 10 percent per year, according to research company Evans Data.

Yet Java's ascendancy hasn't happened quite the way Sun envisioned back in 1996. In stark contrast to the swarm of Java applets populating

Java development...Speech research...Online collaboration...Digital mapmaking

the Web during its first years, client-side Java is almost nonexistent today. Instead, the language has moved behind the scenes, within the application servers that drive corporate websites—and increasingly, companies' line-of-business applications.

During the past year, enterprises have taken Java to heart like never before. The language has matured. Tools for developing and deploying heavyweight Java applications are readily available from Borland, IBM and Sun. And developers now have a wealth of experience with the language.

"Java today has become mainstream," says Mark Driver, research director for Internet and mobile technologies at Stamford, Conn.-based Gartner. As a result, Driver says, Java applications are turning

up everywhere from mainframes to mobile phones—and thanks to improved Java development and management tools, companies don't necessarily need Java gurus to benefit from the language anymore.

Seeking Stability

At Detroit-based Ford Financial—the financial services arm of Ford Motor Co.—Java is central to the company's migration away from a two-tier client/server model toward a three-tier thin-client architecture. While maintaining the company's longstanding big-iron back end (IBM mainframes running DB2 databases), the company is now developing Java-based middleware applications that run on BEA Systems' WebLogic Java application server. Ford's applications,

which handle such core business tasks as loan origination and account management, now have HTML client interfaces, eliminating the need to support client-side software in the company's eight service centers and 150 dealer locations—and making it possible to extend these applications to consumers on the Web.

Ford has no regrets about basing its IT infrastructure on what five years ago was a brand-new technology. "We selected [Java] because it met our scalability, flexibility and value needs; and it has really proven itself," says Marcy Klevorn, director of customer branch and dealer systems for Ford Financial.

What's more, Java now has only one serious competitor—Microsoft's .Net framework—but that competitor is just getting out of the starting blocks. (See ".Net Gain," July 1, 2001.)

Back to the Future: Java Goes Mobile

SUN FIRST touted Java as a universal client-side platform—and even went so far as to develop brain-dead network computers (NC) that relied on Java for their operating system and on servers for their storage and smarts. But NCs flopped, Java applets on webpages are a dying breed, and client-side Java now seems all but dead, especially now that Microsoft has pulled Java support from Windows XP.

Yet Java is quietly undergoing a renaissance on the client—this time as a platform for applications embedded in cell phones, PDAs and other mobile devices. One reason is the announced intention of major cell phone manufacturers to start selling Java-enabled mobile phones. Gartner estimates that 40 percent of PDAs and 68 percent of mobile phones will be Java-enabled by 2006. The prospect of hundreds of millions of Java-enabled mobile devices has many application developers drooling, and by this past June's JavaOne conference, more than 150,000 developers had already downloaded Sun's toolkit for mobile Java—the Java 2 Platform Micro Edition.

In the enterprise, Java-enabled cell phones and PDAs present an opportunity to extend feature-rich enterprise applications to mobile workers, such as traveling sales staff, field service personnel and delivery people. That becomes even easier as enterprises move toward XML-based Web services architectures, which make it easy for developers to extend applications to a variety of client devices.

United Air Lines, for instance, is building a Java-based middleware architecture, with the aim of making it easier to deliver data through a variety of client channels—including, ultimately, wireless devices, says CIO Eric Dean in Chicago. "Web services will be a great way for embedded Java to communicate back with the server somewhere," says Mark Carges, president of BEA Systems' e-commerce application components division.

"Of course mobile and wireless environments are still very immature," cautions Mark Driver, research director for Internet and mobile technologies at Stamford, Conn.-based Gartner. For now, few major corporations have actually deployed Java-based mobile applications; most are just testing the waters. But stay tuned: Once there are hundreds of millions of Java-enabled cell phones in the world, it's only a matter of time before enterprise applications start reaching out to those devices.

—D.T.

Enterprise OS-1

What catalyzed Java's corporate growth was the release in early 2000 of Java 2 Enterprise Edition (J2EE). Not a product, but a set of standards and procedures, J2EE formalized a framework for building multitier Java applications, using technologies such as servlets (Java applets that run on a server), Enterprise JavaBeans to exchange data and application objects, and Java server pages (JSP) to generate HTML for Web-based applications.

J2EE caught on quickly, with developers lured in part by a well-stocked toolkit. "Even with just the J2EE environment provided by Sun, I've got a ton of my application already built," says Ted Shelton, senior vice president and chief strategy officer for Scotts Valley, Calif.-based Borland, which sells Java development tools as well as Java application servers.

The standards provided by J2EE provide, in effect, an operating system for enterprise applications, handling low-level programming issues such as data access, file management and interoperability among application components. "Java is great by itself, but once the operating sys-

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tem galvanized—and that is J2EE—that's what really made it go," says Mark Carges, president of BEA Systems' e-commerce application components division.

Wide Industry Support

Once J2EE appeared, enterprise software vendors, with the exception of Microsoft, quickly lined up behind it. As a result, Java's biggest asset now is the wide range of middleware based on J2EE—BEA Systems, Bluestone, Borland, IBM and Sun's iPlanet all offer Java-based application servers.

For enterprises, standardizing on one platform and language reduces risk, because the single standard makes it easier to replace software if necessary. It also simplifies integration issues and lets the same Java experts work on a variety of projects.

At Ford Financial, a central team of 25 Java gurus works with application development teams in the company's various departments, providing help by evaluating vendors, assisting with integration and implementation, maintaining the underlying J2EE infrastructure, and looking for opportunities to reuse components and code among departments. "You're only going to have so many people in an organization that really have strong [object-oriented] development skills. We try to isolate some of the nuts and bolts from the application teams so they can concentrate on the business logic," says Jeff Lemmer,

Java's biggest asset now is the wide range of middleware based on it.

manager of the e-commerce and application architecture team at Ford Financial.

In some cases, business issues, rather than the language's technical merits—lead a company to Java. "The majority of enterprises are not choosing between Microsoft or Java—they're choosing Microsoft .Net, IBM WebSphere or BEA Systems WebLogic," says David Chappell, principal of San Francisco-based IT consultancy David Chappell and Associates. "In choosing an

enterprise Java product, the most important thing is that the vendor who makes your product will still be selling it five years from now."

Eric Dean, CIO of Elk Grove Township, Ill.-based UAL Corp. (the parent company of United Air Lines), makes a similar point, noting that WebLogic and its Java structure are convenient tools, "but there's not a religion around Java." Instead, the important feature is the middleware layer it provides, he says.

Power Productivity

In its earliest days, Java was touted as a "write once, run anywhere" language. It didn't quite work that way—applications usually need some tweaking to run on different platforms. But what is truly transferable are people's programming skills. Stu Stern, who heads Sun Java Center, the Palo Alto, Calif.-based Java arm of Sun's professional services division, quips that it's a "learn once, write anywhere" language.

In addition, IT managers appreciate the increased productivity of Java developers. Java provides a good balance between rapid development—thanks to its object-oriented nature and the wide availability of Java components—and the ability to access low-level computing processes. According to Richard Monson-Haefel, an author and programmer, productivity under Java is typically 20 percent to 40 percent higher than

when using C or C++, thanks to built-in features such as automated memory management and the ease with which components can be reused. Ford's Lemmer has seen application developers' productivity increase as much as two to three times when they move from C++ to Java.

Java developers are still in high demand, says Gartner's Driver, but their numbers are increasing fast. While Java Developer Connection estimates that there are currently

Companies to Watch

Software for All

LANOVATION, a small software company in Minneapolis, wants to make your life easier. Specifically, it wants to help your systems administrators roll out software updates across your network.

The company's latest product, Prism Deploy, provides an easy way to quickly package and distribute software across various Windows operating environments and hardware platforms, with very little operator training. The package combines Lanovation's PictureTaker software packaging tool with an integrated deployment console that lets an administrator quickly locate machines in need of upgrades. The administrator can then quickly drag and drop deployment tasks onto machines without requiring the end user to shut down, reboot or even to know that the upgrade has taken place. Software deployments have become a matter of simply dragging and dropping packages onto destination machines. Prism Deploy includes tools designed to check for potential conflicts between existing software and the new updates.

The system is also designed to handle remote and mobile clients, which allow software updates to take place through a Web server using as little as a standard dial-up connection.

Pricing for Prism Deploy begins at \$2,800 for 100 licenses. (Enterprise licenses are also available.) Evaluation versions are available for free download at www.lanovation.com. For sales information, call 800 747-4487.



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about 2 million registered Java developers, Gartner puts the number of “qualified” developers at about half that. But the company predicts there will be nearly 3 million experienced Java developers by 2005—forming a rich talent pool for enterprise IT departments to draw from.

The Race Is On

Still, it's too early to say that Java has won completely. The corridors of computer industry history are littered with the corpses of companies that underestimated Microsoft. Although .Net is still brand new, one thing all commentators agree on is that Microsoft will continue to improve it until it becomes a serious threat.

“Over the next five years, we see two de facto platforms for a vast majority of e-business apps: Java and Microsoft,” says Driver. “We don't see a clear winner. We expect a 40-40 split, or perhaps a 50-30 split in favor of Java,” with the remaining 20 percent divided among a variety of legacy and other platforms.

For large companies with a wide variety of platforms and hardware in their data centers, Java will probably remain the platform of choice, thanks to these companies' existing relationships with Unix vendors and to Java's cross-platform strengths. For small and midsize companies, however, it's much easier to standardize on a single platform—and that's where Microsoft may enjoy an advantage, Driver says.

Regardless, the next five years are likely to see a lot of light and heat generated over the Java versus Microsoft issue. Take it all with a grain of salt. Both platforms are technically robust and will likely remain around for a long time, says Chappell. “Both are good enough. If that weren't the case, one would be crushing the other one.” Whether or not that statement still holds in five years remains to be seen—but for now, Java is going strong. ■

D.F. Tweney (dylan@tweney.com) is an award-winning writer and editor covering business technology and the Internet.



UNDER DEVELOPMENT

Speech systems

Speak Easy

Using the Web as a catalog of English

TRY EXPLAINING to a nonnative English speaker why calling someone a wise guy isn't flattering. It's not easy. That's why Christopher Manning, an assistant professor of computer science and linguistics at Stanford University, is turning to the Web to help people master English's strange sayings and seemingly arbitrary rules.

Manning is surfing the Web for examples of the language as it's used in everyday life. “A grammar book doesn't show how people actually use language,” he says. “Real usage is reflected in what people say and write.” So Manning is continually scanning online newspapers, literature, chat groups—even real estate listings—to build statistical models of English usage. The models will help course developers create accurate and useful instruction guides, courseware and related materials, Manning says. “By taking the emphasis off the rules and placing it on how people really speak, it will show students the real world rather than a perfect world.”

Manning's research could also prove useful to speech recognition software developers. As businesses expect speech systems to handle increasingly complex transactions, accuracy is becoming more critical. “You can't just settle for a 60 percent probability that the user said, ‘Buy 100 shares,’ rather than ‘Sell 100 shares,’” says Manning. He claims that speech systems based on probability models of real-life sentence structures would provide faster and more accurate recognition.

Improved data-mining technology could be another offshoot of Manning's research. Statistical models would help computers extract the key information that's tucked inside cryptic real estate ads or court decisions. “People don't speak or write like a real estate ad,” Manning says. “The models would help machines to better understand the specific jargon.”

—John Edwards

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REVISIT
GIS

Point of Reference

Geographic information systems gave us a new look at the world

BY FRED HAPGOOD

ONE WAY OF looking at technology markets is as an exercise in thermodynamics—as the net balance of the competing influences of heaters and coolers. To heaters, the technology in question is not just obvious, but insanely great—a tool that will change everything for the better. Coolers typically feel that the technology is infested with costs, both hidden and obvious, and that the problem it purports to solve can safely be tolerated awhile longer.

Usually these two parties just come from different ends of the issue. Each, like the blind men feeling the elephant, thinks that the end he has under his hand represents the whole.

Geographic information system (GIS) is a perfect case in point. In 1994, we ran an article on the topic by an unabashed heater (“A Sense of Place,” Feb. 1, 1994). In the article Nora Sherwood Bryan pointed out that geography matters in almost every

sphere of business—maintenance, sales, facilities, marketing, distribution, personnel, regulation, inventory. What could be more obvious than using computers to manage and extend these attributes? Given the ubiquity of geography, GIS would bring new powers and efficiencies to every corner of the enterprise. As an industry, the market would run to millions of installations, and dozens of applications would run on each site. The implications were awesome. Nothing would be the same again.

At the time, GIS heaters tended to come from the cartographic and computer-aided design/computer-aided manufacturing (CAD/CAM) communities. These were people who had been raised on the power of visual information and, in particular, on the authority of maps. A well-made map conveys a huge amount of information at a glance, on a single page, elegantly and beautifully. Clearly, they felt, any

Collaboration

PREDICTIONS

Get the Message

USE OF collaboration tools continues to grow at a dramatic rate, according to a recent report from IDC (a sister company to CIO's publisher, CXO Media).

IDC reports that sales in the collaboration market, including instant messaging, integrated collaboration environments and other products, will total more than \$4 billion by the end of 2001. And the fastest-growing segment—instant messaging—will encompass 150 million users by 2004. Between 2000 and 2005, the report says, the segment's compound annual growth rate will be 104 percent.

The report also notes that messaging applications such as e-mail, instant messaging and unified messaging—with their real-time and mobile capabilities—are beginning to overtake more traditional integrated collaboration environments as the tools of choice for business.

The report, “Collaborative Applications Forecast and Analysis Summary, 2001-2005,” provides an overview of the entire collaboration application market as well as revenue forecasts by market and operating environment plus market trends and data about relevant vendors.

For more information, visit www.idc.com.

—Christopher Lindquist



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technology that allowed us to tap a little deeper in to the magic of maps was bound to pay off in the long run.

Coolers tended to come from management. According to David Sonnen, a consultant on GIS with analyst group IDC (a sister company to CIO's publisher), management agreed that geography was important, but that did not mean it had gone ignored. People pushed pins into maps, kept index cards sorted by street names, compiled lists in order of geographic zones and mostly consulted an innate geographic intuition learned from experience. All these techniques were cheap, simple and convenient. What was the point of going through the work and expense of digitizing all this data? Kija Kim, president of Harvard De-

to Kim, 75 percent of the budgets supporting these installations could be eaten by data conversion costs.

For both of these reasons GIS technology required specialized staff. "Managers would tell me, 'We don't know how to talk to them, and they don't know how to talk to us,'" Sonnen says. Staff, hardware, software and data could easily run to a half-million dollars a year. As a result, most GIS clients in the early '90s were large players with very clear applications: utilities, telcos and government agencies.

However, during the '90s, private data services appeared that organized, maintained and sold access to libraries of pre-digitized geographic data. Databases became geographically aware. Years of effort

ing to Gil Castle, vice president of content at Vectiv, a software developer in Berkeley, Calif., that offers a solution for real estate acquisition and development. Sometimes, as in MapQuest.com's Internet service, these costs went to zero for the end user.

This collapse in costs meant that GIS was finally able to permeate all the functions that Bryan had seen seven years ago. Today companies embed GIS in data warehousing, human resources, materials, facilities, sales-force automation, customer service and marketing applications. As it has pervaded these applications, however, it has dropped from sight as a specific industry and a discrete class of products. When a soft drink company installs a system that automatically flags the nearest repair truck after a vending machine goes down, the product is marketed and managed as maintenance software. When a forestry company buys a program that promises to figure out the fastest, cheapest way of getting trees to lumber mills, it buys a logistics program. They just assume that the program knows where these mills are relative to each other. No one would call a CRM program that made use of demographics based on a customer's ZIP code a GIS product.

GIS has become a gear in decision support systems, barely visible to those not building the geographic code or writing the data subscription checks. (This change in profile is mirrored by a change in name: Today GIS is commonly replaced by the more general term *spatial information management*.)

In a sense the predictions of the heaters have been borne out in that GIS is as pervasive as they imagined. But the victory is not entirely sweet; getting the win meant that the technology had to lose its identity. Of course, it wasn't a complete sacrifice. Today when Kim tells people what she does, she says they get it. They get it right away. **CIO**

Do you have a topic that you'd like us to revisit? Send it to et@cio.com.

Clearly, any technology that allowed us to tap a little deeper in to the magic of maps was bound to pay off in the long run.

sign and Mapping Co., a GIS services shop based in Cambridge, Mass., recalls that potential customers used to have trouble understanding the need for her services. "People would ask, 'But what is it you really do?'" she says.

There was no denying the expense. Few databases understood the concept of searching "within" a location, which meant hiring programmers to solve the problem. Users became responsible for converting paper maps and aerial photos into formats that a GIS application could read. (In the case of photos, geographical borders, altitudes and land uses often had to be drawn in by hand using a monitor and a light pen.) According

and experience produced "vertical" GIS interfaces that were adapted to specific industrial contexts and that didn't require rocket scientists to run. "The specialized interfaces reduced training from two years to a few days," says Sonnen. Hardware prices fell and fell again.

In addition, GIS benefited from three pieces of good fortune: The general trend to all things digital meant that as local and regional governments began operating digitally, more public information (census data, assessor's records, street maps, land use) became available without conversion costs. The Internet made data distribution cheap, reliable, rapid and automatic. The globalization of the world economy meant companies in emerging countries could offer low-cost scanning and digitization services for maps and photos. All of these advances lowered GIS costs by at least two orders of magnitude, accord-

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NEW TOOLS FOR NEW JOBS,
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Opinion

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Re:

The Web's promise
Spinning off good ideas has its advantages

When the Web Works

BY DAVID ROSENBAUM

THE FIRST TIME I bought anything online was in 1998. It was a dozen Spaldeens at Justballs.com.

Officially, a Spalden is a Spalding Hi-Bounce Ball. In New York City in the '60s, we called them Spaldeens. They were hard and pink, and we picked them out of candy store bins for 25 cents a pop. They were the killer app for stickball, stoopball, punchball or simply throwing against a wall until your mom called you in for dinner.

I forgot about Spaldeens until my son reached the age when it seemed appropriate to introduce him to the constant companion of my youth. But where could you find one? Not at the corner candy store. There are no corner candy stores any-



more. Not at Toys "R" Us. All its balls flash, buzz or jitterbug. Then I heard about Justballs.com, a funky little website that sold nothing but balls. And there they were. Of course, they weren't 25 cents anymore. They were more like a buck and a half. Still, I ordered a dozen.

About the same time, I started doing my grocery shopping online. How great was that! You clicked in your order and 24 hours later your bottled water, butter and bread showed up. No

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lines. No idiot tossing watermelons on top of your grapes.

But 1998 now seems like a very long time ago. My online grocer, Home Runs, folded this summer. Now I'm back in line, trying not to go nuts while some fool tries to use a maxed-out credit card to buy a pint of Cherry Garcia.

Let's face it. For a whole lot of reasons things have not turned out so well for a whole lot of people at a whole lot of businesses. Here at *CIO*, we reported on the disasters, such as Boo.com, eToys.com, Kozmo.com and Pets.com, and being journalists, we became detached—because that's both the job description and the dominant personality trait of the people who go into the business—and grew cynical. And as those ventures bit the dust one by one and as their failures rippled through the economy, affecting vendors, suppliers, investors and recently the publications that were created to tell their stories (R.I.P., *The Industry Standard*), that cynicism has expanded to encompass the Web and e-commerce itself.

Much of it is justified. But much is not.

The other day, my boy suggested a game of catch. We searched the house. No Spaldeens.

I retreated to my computer, typed in Justballs.com, and the site was still there. Different, certainly. Less funky than before. It will put your corporate logo on 1,000 foam footballs. And it now sells windbreakers and polo shirts. But it still has Spaldeens. That, finally, is the promise of the Web—to provide what's needed, once what's needed is defined. There are still good ideas out there. (Some day, someone will figure out the online grocery business.) Despite all the doom and gloom, this e-commerce thing can still work.

But this time I ordered *two* dozen Spaldeens. Because you just never know. ■

David Rosenbaum is managing editor at *CIO* magazine. He can be reached at drosenbaum@cio.com.

Put a Spin on IT

BY REID MCRAE WATTS

AS A CIO, you came up dry when looking for a sophisticated off-the-shelf B2B system for your company. So when your programming staff wrote a proposal to develop a state-of-the-art B2B system, you jumped at the chance. It's a good thing you did too, because your programmers really did a great job. The system they created is years ahead of anything on the market, and enough of your suppliers are now online that you can report measurable results to your CEO. In short, the homegrown B2B system is the pride of the IS department.

You might be inclined to hold on to such an achievement because it's the greatest feather in your cap. But that could be the wrong move. Instead, you should consider spinning it off.

Here's why. If you don't create a spinoff, you take several risks that might otherwise be avoided: investing a significant amount of money to upgrade features as the B2B system gains momentum; annually spending a significant amount of money on system maintenance; growing user dissatisfaction because of insufficient budget and resources needed to keep up with new feature requests and service extensions; and spending money to convert that system in a few years to an industry standard pack-

age that will save the ongoing maintenance and updating costs.

Suppose you did things differently this time and spun off the project as an independent company. Some of the benefits would include the creation of additional value to the shareholders; the avoidance of a significant amount of annual upkeep and new feature costs by sharing these costs with other customers; and finally escaping the eventual conversion costs if it succeeds at becoming an industry standard—which it should, since it is so far ahead of the competition. By setting the precedence of spinning off the most creative projects, you will find that you can attract a new category of talent as well.

However, achieving these benefits isn't a given. You'll have to take a systematic approach to the spinoff. Start by developing a business plan for the new venture that meets VC criteria for funding. Then decide, as part of the business plan, how to set up a contractual arrangement so that your company will get the uninterrupted services it requires from the spinoff. Next, establish a new company for the spinoff. Then follow up by transferring people, assets and intellectual property to the new company. Finally, work with a venture capitalist to get the spinoff placed into a VC fund as a payment-in-kind in return for a limited partner ownership stake by your company.

The results could be spectacular. You stand a chance of creating one of the next IT leaders. Your costs should go down, and your services and features should go up. Best of all, you will not have to convert to an industry standard in a few years. Your applications will have become one. **CIO**

Reid McRae Watts is founder and managing general partner of Progeny Ventures, a VC fund in Columbia, S.C., specializing in early stage spinoffs of IT ventures.

CIOs to the Core



Gary J. Beach

ARE YOU A "CORE" person or are you a "context" one? That's the question tech guru Geoffrey Moore posed to hundreds of attendees at a recent *CIO* executive programs event. Moore defines core as business processes that create new business opportunities. Context is everything else. In Moore's view, CIOs spend way too much time on context and way too little time on core.

Core IT projects help grow revenues, satisfy customers, reduce costs, increase market share, or all of the above. They are the pillars of what Moore calls the "factory of creating shareholder value." Core projects excite and motivate CIOs. Context projects—such as putting a new Web interface on a nonmission-critical business process—waste time, money and careers.

After listening to Moore, I traveled to a major vendor's CIO summit where I presented the results of the latest *CIO* Magazine/Deutsche Banc Alex Brown monthly IT spending survey. During the past 15 months, the surveys have mapped a steady decline in planned IT expenditures. (For survey results, visit www.yardeni.com/polls.)

Before I took the podium, I decided to combine Moore's comments about core versus context with my reasoning as to why corporations across the country reduced their IT expenditures in 2001. After I shared the drop-off in spending with the audience, I asked the CIOs in the room if they really thought CEOs were convinced their IT expenditures were indeed the "factory of creating shareholder value." If they thought so, why then did CEOs cut their budgets so dramatically in the past year?

The room went silent. I could see in the eyes of the attendees that they were spending too much time on context projects.

Many of you are now in the final stages of your 2002 budget approvals. Don't forget that the more you are able to frame those wanted investments as core projects, the more dollars you will get in 2002. It's as simple as that.



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Step One: Defining ROI Goals— THE BEDROCK OF CRM INITIATIVES

In another time, in a place far away, Marketing was known to say things like: "My gut feeling is that we're not getting enough customer mindshare. Let's put \$10 million into a branding campaign and see what happens."

But that was another time and another place. In today's marketplace, characterized by tight budgets, an uncertain economy and fierce competition, enterprises want assurance that for every dollar spent, they will realize a significant return on investment (ROI). This is particularly true for the burgeoning field of customer relationship management (CRM).

Marketing, IT Partnership

"For CRM to realize its full potential, there has to be a close working relationship between IT and marketing," says Brian Carty, Wheelhouse president and CEO. "In today's environment, it's impossible to separate marketing initiatives and the technology infrastructure that supports them—whether it's launching a new call center operation, building a customer database for direct mail campaign management, or integrating online and offline data to provide a comprehensive view of the customer."

"As we work with our Fortune 1000 clients, we see that Marketing departments have always been responsible for program ROI and are now becoming increasingly accountable for infrastructure ROI, which includes the IT resources required to support a set of marketing programs. Marketing's goal may be to reduce costs through mar-

keting automation, to increase revenues and build market share, or to spend existing marketing dollars more efficiently. But each of these initiatives depends upon an infrastructure to be deployed by IT, so IT must be very involved in developing business cases and conducting ROI analysis."

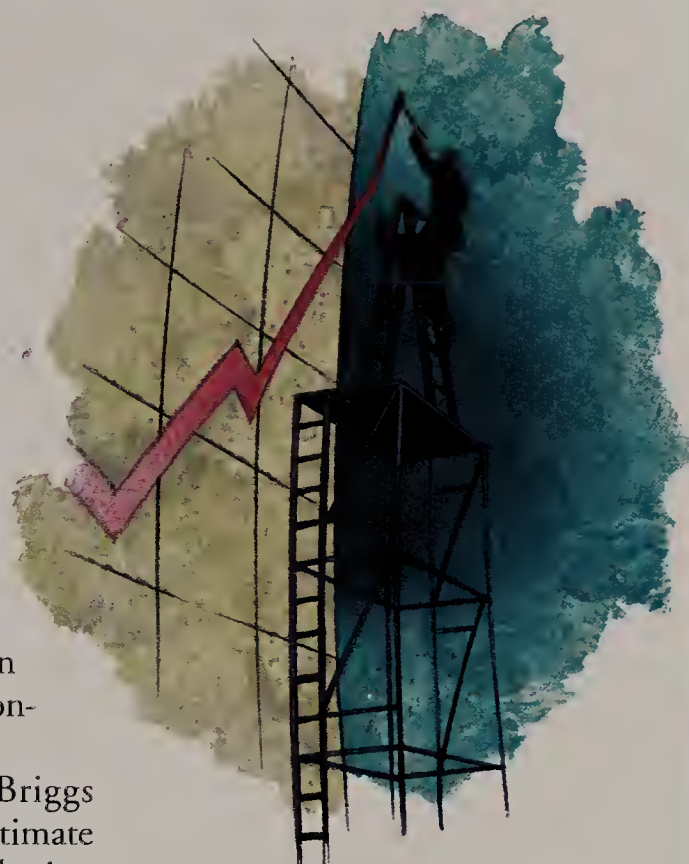
Wheelhouse CTO Barry Briggs adds, "In order to accurately estimate infrastructure ROI, both marketing and IT have to understand the capabilities of their current CRM infrastructure and the business requirements that are driving the need for future infrastructure investments."

As marketing and IT begin to synchronize their efforts, there are many hidden pockets of value to unearth. "For instance," Briggs says, "Many organizations have not coordinated their existing systems and valuable customer data. Customers' addresses and credit card numbers may be on your Web server or in the billing system, while your analytic system has product preferences. And your call center stores their contact history and the last four things they complained about."

Deciding which customer data is relevant and then making that data accessible to Marketing in a consolidated fashion for segment analysis may result in the performance improvement of existing campaigns. Delivering outstanding ROI on CRM initiatives is about being smart on infrastructure choices.

Calculating ROI

Briggs stresses that ROI goals must include quantifiable calculations covering both sides of the equation: financial benefits (revenue and cost reduction) and the capital and expense infrastructure costs. The two sides of the equation are linked using traditional investment



analysis techniques, including NPV—Net Present Value to understand the present value of future cash flows; IRR—Internal Rate of Return to

Seven Steps to Successful CRM Infrastructure

A Guide for CIOs

In this series of articles, Wheelhouse Corporation describes seven key steps to implementing a technical infrastructure for successful customer relationship management (CRM) initiatives.

CRM requires a close coordination between the enterprise's business and IT organizations—today's CIOs have to become as familiar with the operational complexities of CRM as they have been with their enterprise's computing and networking infrastructure.

These articles are based on Wheelhouse's extensive experience as a CRM infrastructure provider helping Fortune 1000 companies deploy, manage and optimize marketing-driven CRM systems. Wheelhouse customers include such well-known companies as Cablevision Systems Corporation, J.P. Morgan Chase, Merrill Lynch, Trendwest Resorts, Inc., VoiceStream Wireless and Wells Fargo. In this first article, we look at the all-important issue of ROI, the foundation of every successful CRM initiative.



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understand whether an investment reaches a corporate hurdle rate; and Break-Even Models to define the necessary performance characteristics of the financial benefits. Nonquantifiable benefits—increasing customer loyalty, targeting a new sector or penetrating a distribution channel—are harder to calculate but can be equally important.

The ROI model takes into account revenue and variable cost drivers as well as general overhead expense. For example, a company may decide to focus on revenue uplift by creating a cross-sell campaign for a certain customer segment. Choosing a new channel, such as e-mail, impacts both the cost of executing the campaign and the expected conversion rate. For instance, while e-mail response rates have dropped dramati-

Frequently Used Benefit and Cost Drivers:

Benefits:

Cost Reduction

- Customer Acquisition Costs
- Campaign Execution Costs
- Ongoing Maintenance Costs

Increased Revenues

- Frequency of Purchase
- Increased Cross-Sell & Up-Sell

Costs:

- Variable Program Costs
- Personnel Costs
- Systems purchase, implementation and ongoing management costs
- Training Costs

to capture the value in their CRM systems. Many companies have invested in one or several CRM applications, but these rarely communicate in order to realize the CRM vision of a holistic system that meets the relationship management needs of the Sales,

Customer Service and Marketing organizations. It is the careful development of the CRM IT infrastructure that can make this vision become a reality.

Succeeding at CRM

"Today, the difference between winning and losing customers often hinges on a company's ability to implement a successful CRM infrastructure," Carty concludes. "This is not always easy. Suppose you decide to launch several simultaneous efforts—such as the upgrade of your Web content system to provide personalization functionality; the integration of outbound e-mail capabilities into your campaign management system; or the implementation of a new call center application. Determining each project's incremental contribution to your overall ROI requires rigorous modeling prior to implementation."

Wheelhouse has developed an evolving set of best practices that help customers accurately measure ROI before committing substantial Marketing and IT resources. Having a clear picture of the most probable outcomes of your company's new CRM initiatives can make all the difference to your long-term bottom line.

Coming up in the December 1 edition of *CIO*:

Step 2: Identifying Your Customers and Honing Your CRM Marketing Strategy

To download an electronic version of this article, go to www.wheelhouse.com/articles

To learn more about how we can help your business with CRM infrastructure innovation, call 781-505-3255 or e-mail us at info@wheelhouse.com.

Case Study

Publishing Company Develops ROI Model

Consider this example from the world of publishing. Current circulation marketing campaigns for subscriber acquisition and retention are based on a random selection process to identify the list for direct mail and telemarketing programs. Limited effort is made to sort the data and target prospects and customers based on how likely they are to respond to the offers.

In order to boost campaign results, Marketing works closely with IT to build an ROI case for an infrastructure that would enable more sophisticated targeting and response analysis. The ROI case considers the implementation of campaign management and analytic applications as well as the ongoing management of a data infrastructure coordinating multiple sources across the enterprise.

From an ROI perspective, better targeting will produce higher response rates, and given the same marketing spending, the result is a positive impact on the publishing company's bottom line. Per subscriber acquisition costs decrease with improved targeting—the Marketing department is able to mail fewer pieces and make fewer calls to achieve a given response. Infrastructure and applications deployed by the IT organization can be rapidly amortized as subscriptions grow and revenues increase.

cally, targeted campaigns to loyal customers can lead to surprising results.

Of course, the company must also consider general overhead expenses such as: data integration and management costs; campaign management systems and ongoing support; and the cost of new servers and supporting network bandwidth. In fact, every line on the ROI model must be justified by the company's own experience as well as third party research into historical data. If the data is not available, relevant industry metrics from credible market research houses can fill in the gaps. The best ROI cases forecast several scenarios that are realistic and achievable.

Applying the Wheelhouse AMC

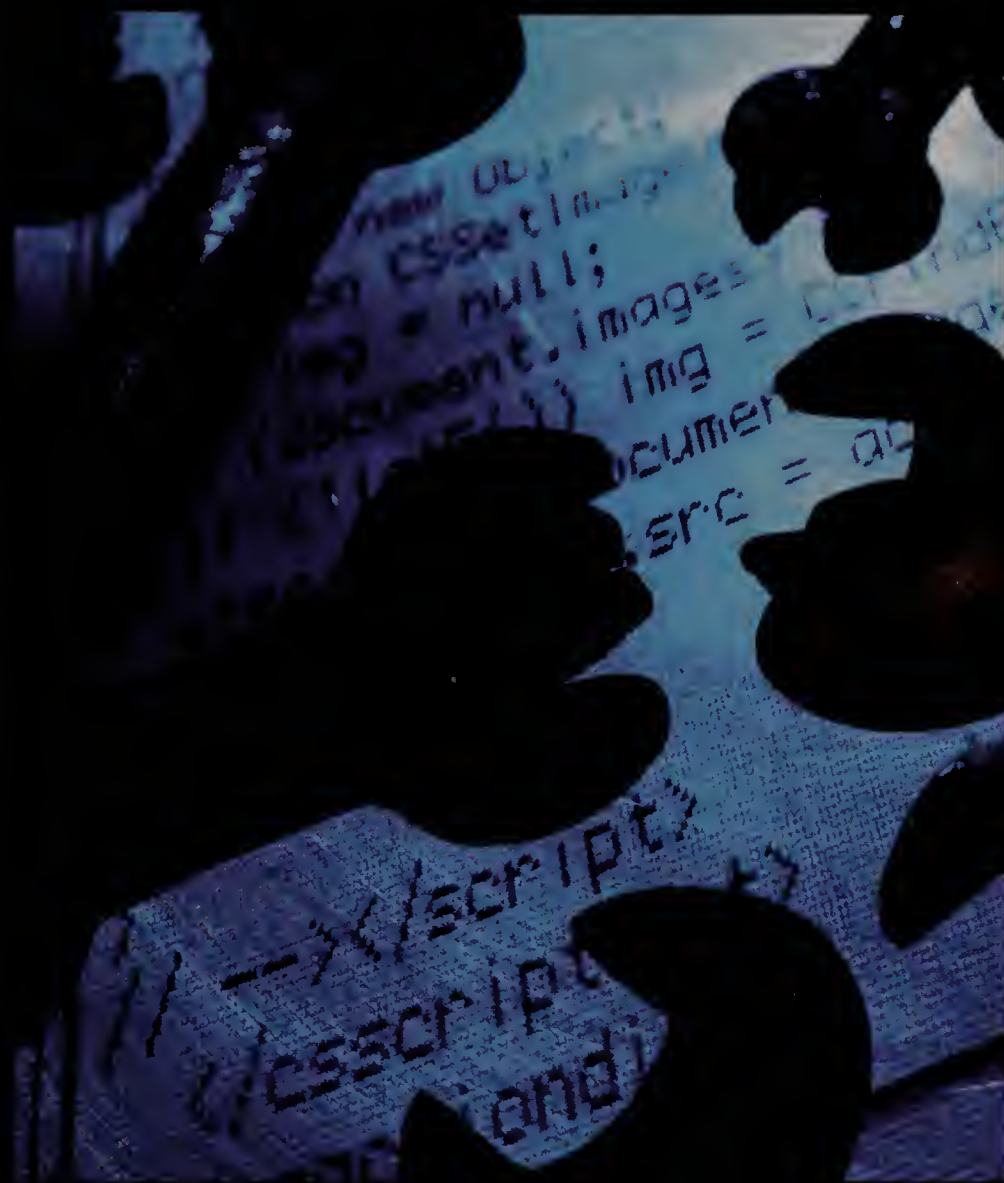
Wheelhouse often recommends rapid prototyping of specific CRM initiatives before rolling the application out across the entire enterprise. Frequently these pilot programs are implemented using Wheelhouse's Applications Management Center (AMC).

"When we work with our customers to create an accurate, program-based ROI model, some companies opt to deploy a pilot to collect valuable performance data before enterprise rollout," Briggs says. "The AMC is our fiber-linked technology development, staging and management center for CRM system deployment. It eliminates many development constraints—for example, buying hardware, negotiating software licenses and integrating databases—by providing a complete platform for building and launching a CRM initiative. Because the AMC lowers up-front costs and frees up enterprise IT resources, companies can get to market more quickly, and more accurately gauge the ROI from enterprise rollout."

While focusing on the deployment of individual CRM systems is important, only a well thought out CRM infrastructure can unite disparate CRM and legacy systems to allow companies

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An aerial photograph of a dense, green forest. A dark, winding river or path cuts through the trees, forming a series of loops and curves. The text is overlaid on the image, following the path of the river.

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“NATURE ABHORS A VACUUM TUBE,”

the saying went. Ever since the vacuum tube's introduction in 1906 (see “Cool Tube,” Jan. 15, 2000), people sought to improve the unwieldy, power-sucking signal amplifiers. By 1939, physicist William Shockley thought a solution might lie in solid-state physics. After the war, AT&T's Bell Labs assigned Shockley, Walter Brattain and John Bardeen to develop a solid-state amplifier.

Shockley mostly worked off campus. At the lab, Brattain found that a germanium crystal in contact with two wires two-thousandths of an inch apart amplified current. He and Bardeen then built the first point-contact transistor—a name derived from the words *transfer* and *resistor*. Bell Labs unveiled the invention in June 1948.

Shockley missed out on it all. So he holed up in a hotel room and designed the junction transistor—stronger and easier to make than its point-contact cousin. Despite bad blood, Brattain, Bardeen and Shockley were jointly awarded the 1956 Nobel Prize in physics.

By 1951, commercial production of both types of transistors had begun. Transistors soon entered popular culture with the iconic pocket radio. By the 1960s, no teenager would be caught without a

Honey-Tone De Luxe hi-fi transistor radio or equivalent on her beach blanket, and the sounds of distant baseball games wafted from front stoops everywhere.

Today, silicon chips typically contain more than 7 million tiny transistors. The technology is part of every information-age innovation—from MP3 players to the International Space Station. **CIO**

E-mail your transistorized thoughts to Senior Writer Stephanie Overby at soverby@cio.com.



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